PULP & PAPER

THE PRODUCTION AND MANAGEMENT JOURNAL OF THE NORTH AMERICAN PULP AND PAPER INDUSTRY

MAY 1953 VOL. 27 NO. 5

the difference is

Better Sizing Results...Using Less Size!

CYFOR® Rosin Size

Scores Economies in Most Sizing Operations, Improves Efficiency of All!

Do You Want Medium or Hard-Sized Papers? CYFOR'S for you...

You can meet even highest sizing specifications with proportionately small amounts of CYFOR Fortified Rosin Size. Moreover, CYFOR facilitates smooth machine operation through reduction of sizing percentages, and it produces hard-sized papers with less size in the sheets. Also... in most medium- and hard-sizing operations, CYFOR cuts overall sizing costs substantially!

Do You Want Regular-Sized Papers? CYFOR'S for you, too...

Pound for pound, CYFOR gives better sizing results than ordinary size, so you use proportionately less. CYFOR pays off, too, in highly satisfactory, uniform sizing results.

Generally, you'll have less to order, less to ship, less to store... with CYFOR! Talk this over with a member of Cyanamid's Technical Service Staff, and see.

Cyanamid Paper Chemicals: ACCOBRITE® Rosin Size • ACCOCEL® Dispersants AEROSIZE® Sizing Emulsions • AEROSOL® Surface Active Agents • ALWAX* and WAXINE® Wax Sizes • AZITE® 900 Liquefier • CALMICRO® Calcium Carbonate CYFOR® Rosin Sizes • CYNOL* Rewetting and Softening Agents • CYRON* Synthetic Size • PAREZ® Wet-Strength Resins • Rosin Size—Liquid and Dry • Aluminum Sulfate Sodium Phospho Aluminate • Clays • Defoamers and other Specialty Products • Acids Alkalis • Other Heavy Chemicals

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PAPER CHEMICALS DEPARTMENT PP-5

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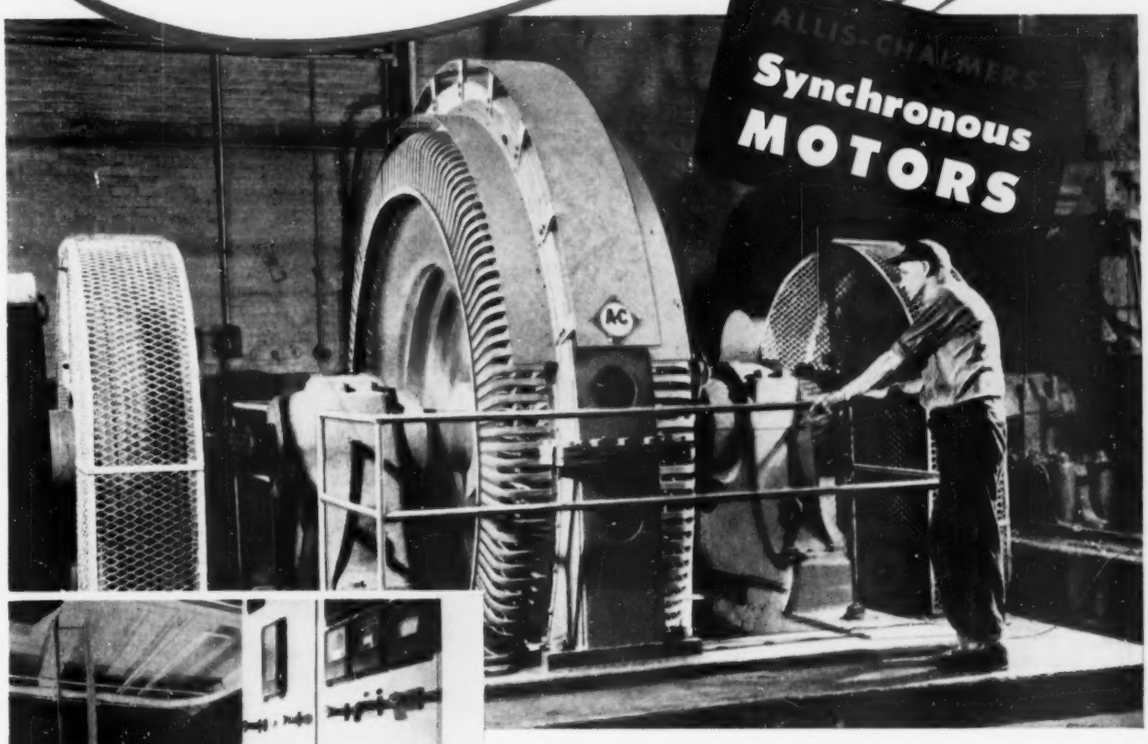
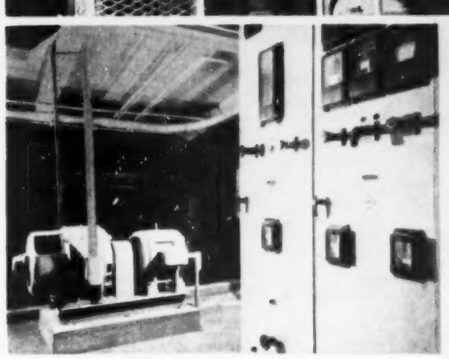
In Canada: North American Cyanamid Limited, Toronto and Montreal

Revamped Installation Produces 25% More Pulp





Revamped grinder motor in Northern Paper Mills plant at Green Bay, Wisconsin, is rated 3000 hp, 100% pf, 4000 volts, 225 rpm. Revamping required no changes in foundation or motor base.

Bottom view shows 25-kw, 1750-rpm excitation motor-generator set and 4160-volt, vertical lift, metal-clad switchgear for control of the grinder motor.

Northern Paper Mills recently completed revamping operations that added 25% to the capacity of a 23-year-old grinding installation. By retaining much of the original equipment, machinery and installation costs were minimized.

To drive larger stones in the grinders, Allis-Chalmers supplied a new stator and rotor to raise the rating of the double-shaft-extension motor from 2500 hp to 3000 hp. In addition to the new motor parts, A-C also furnished an excitation set and switchgear for controlling the motor.

For old or new plants, Allis-Chalmers can supply your electrical needs from power generation to drive motors. For helpful information about synchronous motors, ask your A-C representative for Bulletins 05B7648 and 05B7649, or write to Allis-Chalmers, Milwaukee 1, Wisconsin. A-4027

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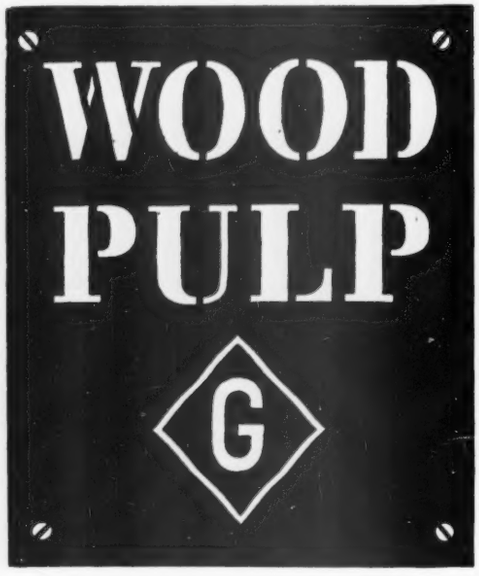

"All that happens began in the past
and presses hard upon the future."
T. S. ELIOT

The tremendous activity in the Pulp and Paper Industry today, its expansion, its development of new ideas, new products, new opportunities, are all linked to the hard-won accomplishments of yester-year . . . and provide inspiration for all that is planned for tomorrow.

★

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PULP & PAPER

Production and Management Magazine of the Industry

May 1953
Vol. 27—No. 5

"The Cellulose Age"

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PULP & PAPER circulates all over the world—throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand, Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Guatemala, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Italy, Netherlands, Portugal, Spain, Switzerland, Soviet Russia, Poland, Yugoslavia, India, Pakistan, Israel, Morocco, Egypt, Turkey, South Africa, China, Hong Kong, Japan, Formosa, near and far around the world, wherever pulp and paper are made.

What's Going On in Washington?

Major events affecting this industry are shaping up in Washington. Also in Ottawa.

PULP & PAPER sent two of its most experienced editors to Washington to find out what these changes may portend.

It was a novel and encouraging experience for an industrial magazine—for any magazine or publication, for that matter. Nothing like it has been experienced in Washington for 20 years, except by a few chosen "mouthpieces." No back door stuff—the front doors were wide open for PULP & PAPER to talk freely and frankly with the top men of the Eisenhower administration.

So, the information published in this issue is not hearsay or backstage whisperings, such as trickled to industry for the past 20 years. The articles in this issue are entitled:

FRONT DOOR STORY.
THE TARIFF IS JOINED.

Our Canadian editor contributed "one side" of the two sides presented in that latter story.

There is probably no issue of more long term significance today to this industry on both sides of the border than tariffs. It has been suggested there may be a gradual tariff reduction over the years, but not all the way, on paper. Then, should not Canada also raise the barriers to export of its pulpwood? Make it a two-way street.

At any rate, we suggest that you turn to our tariff article. The American industry is now taking its stand on the issue. The facts about tariffs and how much they mean to this industry should be known by all who live and work in the pulp and paper mills. By June 12, Congress must take action on the Reciprocal Trade Agreements or let them expire.

Paper Industry Yesterday—Pulp and Paper Today

Many who serve this industry today, and have been associated with it for many years, have been too much a part of its development to have appreciated clearly its major change in character. The industry has advanced swiftly and broadly, so that today it should be regarded as a dual industry, linked together by wood cellulose fibers, the basic product of our forests and the raw material for pulp and paper.

In a relatively short period, North America has become the world leader in *both* the consumption and production of *both* pulp and paper—a gigantic integrated industry permanently based on native forests, and far different in character than the old paper industry of 25 years ago!

The terms used to describe the industry bear testimony to the transformation. From the beginning of the industry in this country it was the "paper industry", and until 25 years ago had its principal roots in the Northeast and the Midwest. The change began with the building of great new market-pulp mills on the West Coast which began the trend toward self-sufficiency in pulp supply for North America. By 1935 most of the newsprint industry had moved into Canada; and by 1940 the trend to the development of large integrated operations was clearly defined. This latter trend included the building of a great kraft industry in the South. So that by 1950 the 25-year cycle was complete, and what had been the "paper industry" was now the "pulp and paper industry" with gigantic integrations and the world leader in production and consumption of both products.

PULP & PAPER has followed step by step the development of this industry, adjusting itself to the growth of the field so that today its editors personally cover activities in every part of the United States and Canada where pulp and paper are made.

Paper in the New Russian Regime

The tip-off that the Russians are placing more emphasis on paper: When Malenkov and his quadrumvirate reorganized the government they created a Ministry of Forestry and Timber and Paper Industries. This supplanted what had formerly been the Ministry of the Timber Industry. Georgi Orlov, who held the former ministry, was named to head the new one.

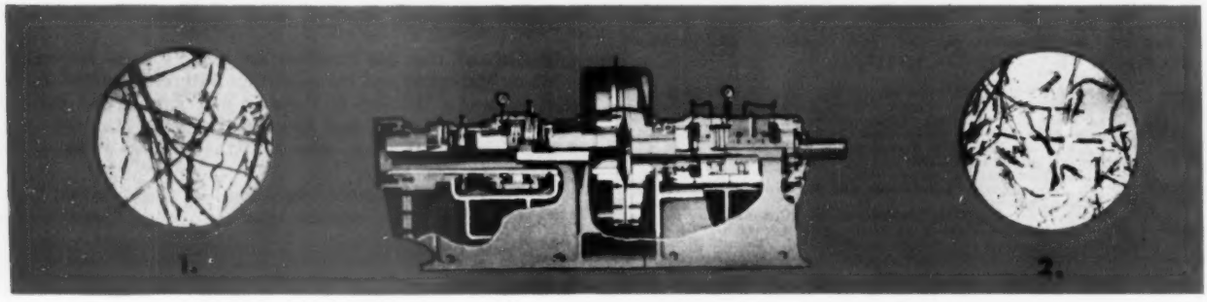
Another change, possibly significant—a Construction Industry portfolio was created to replace what had been Construction Machine Industry.

It Isn't "News"

Far fewer lines in newspapers have been devoted to progress made through intelligent collective bargaining than to the strikes that cause financial and other losses to both companies and employes.—*WEYERHAEUSER Magazine.*

FIGURE 1. A typical Sutherland-treated pulp. Note the length of the fibrils, many of which are still attached to the parent fibers. Thoroughly beaten and refined, the fibers have, nevertheless, not been seriously weakened and chopped up in the process.

FIGURE 2. The effect produced by a Jordan on the same pulp at the same freeness. It can be seen that the fibers have been chopped up into segregated fines, impairing fiber quality and sacrificing many desirable qualities in the finished product



. . . SUTHERLAND REFINER

As a result of the Sutherland Refiner's controlled, continuous beating process you get a controlled fiber quality. This means:

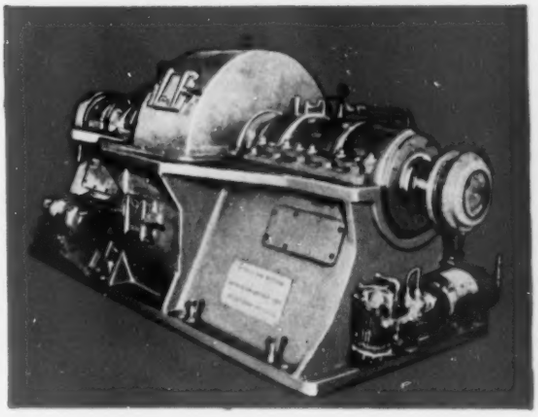
1. Day in and day out—the *right* fiber qualities to meet the required sheet specifications. *Improved quality. Dependable quality.*

WITH THESE ADDITIONAL ADVANTAGES . . .

2. *HIGHER TONNAGE* . . . On a wide variety of applications, Sutherlands have repeatedly demonstrated their ability to produce quality products at increased machine speeds because of the faster drainage and drying qualities of Sutherland treated pulps. This means greater production . . . higher tonnage . . .

3. *REDUCED OPERATING COSTS* . . . Lower power and maintenance costs—plus increased production—mean a substantial reduction in operating costs per ton of paper . . . add up to one of the essential features of mill modernization.

4. *HIGHER OPERATING EFFICIENCY* . . . Less down time, less rejected paper, and low floor space requirements result in more tons of quality paper year in and year out . . . increased efficiency . . . and greater profit.



These are the advantages of Sutherland Refiners, advantages that are being demonstrated by more than 400 Sutherlands in mills throughout the country. Write for your copy of an article outlining one mill's experience. It will be furnished promptly . . . without obligation.

We're sure you'll find it *very* interesting—it *could* well be *your* experience.

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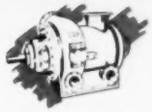

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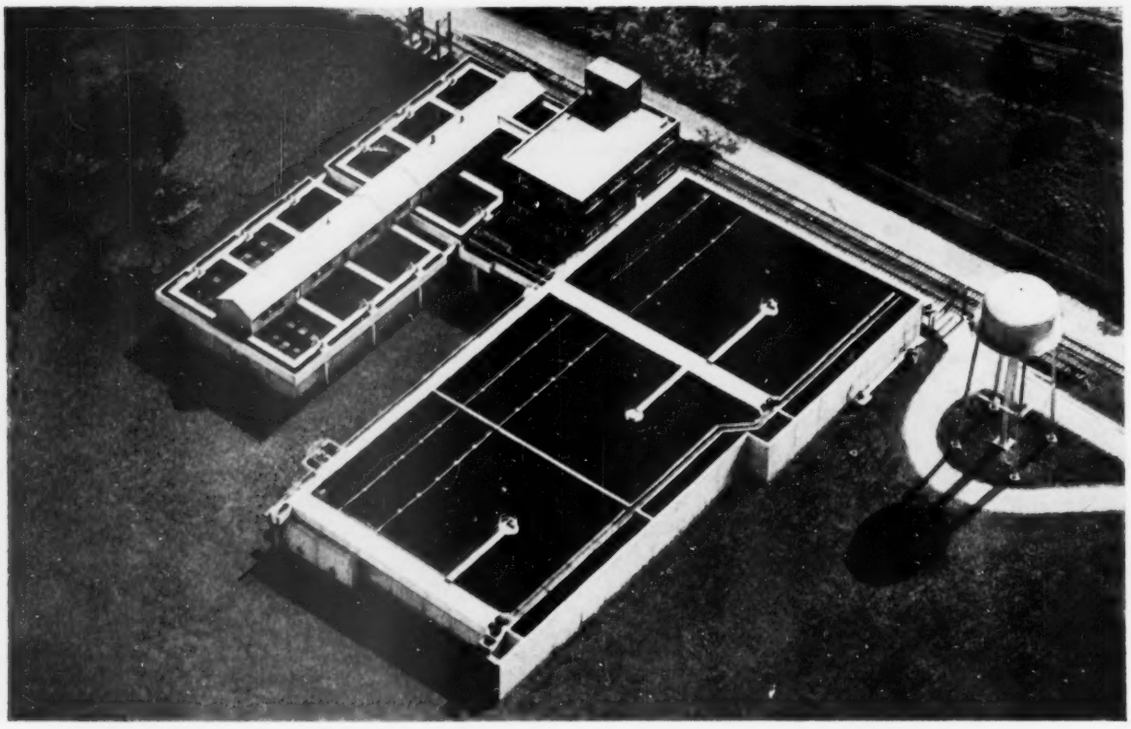

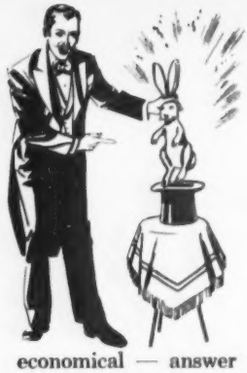

There's No "Magic Formula"

Every water treatment problem is different

No two water treatment problems are exactly alike. To get the best — and most economical — answer to your specific problem requires careful analysis of raw water composition, rate of flow and the results you require.

There *is* no magic formula . . . no single equipment unit that will give ideal results under all conditions. That's why it will pay you to check both conventional and high-rate units on every water treatment problem.

For a brief picture of the complete Dorr equipment line ask for Bulletin #9141. The Dorr Company, Stamford, Conn.

Repeat order in 1950 "proves out" a "conventional" installation made in 1948.

Quick facts about the Dorrco installation at the Hollingsworth & Whitney Co., Chickasaw Mills, Mobile, Alabama

1948 . . . First order installed with a design capacity of 10 MGD.
- 2 Dorrco Flash Mixers
- 1 Dorrco Flocculator
- 1 Dorrco Squarex Clarifier, 85' square

Operating Results . . .
- Raw water: Color — 65-70 ppm
- Raw water: Turbidity — 3.5-3.9 ppm
- Finished water: Color — 3 ppm
- (Dosage in ppm: Alum 20, Soda Ash 15, Chlorine 3 to 5)

1950 . . . Second order installed with design capacity of 16 MGD. (Total design capacity: 26 MGD)
- 1 Dorrco Flash Mixer
- 2 Dorrco Flocculators
- 2 Dorrco Squarex Clarifiers, 75' square

Flocculator and Squarex are trademarks of THE DORR COMPANY—Reg. U. S. Pat. Off.

Every day, nearly 8 billion gallons of water are treated by DORR equipment.

Better tools TODAY to meet tomorrow's demand

DORRCO

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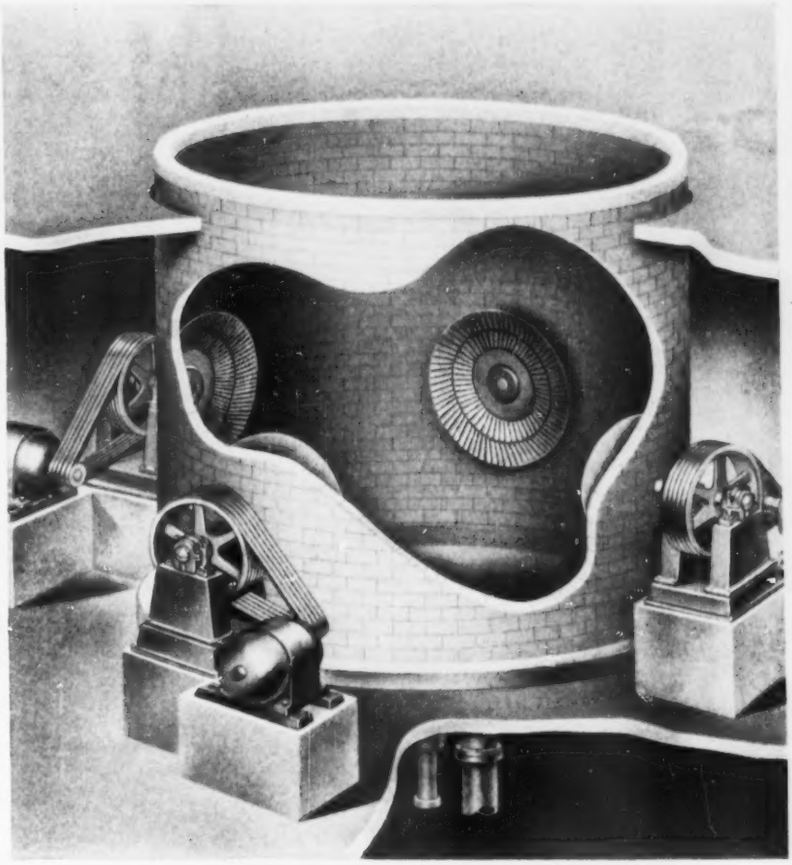
RICE BARTON

QuatroPulper

. . . a high production machine . . . ideal for disintegrating pulp, broke or waste paper



The stock is charged all at one time into the top of the vat. Four DynoPellers (described below) subject it to the vigorous dynomizing action that completely separates each fibre from its neighbor, maintaining its original length. The simple operating principle and design of the QuatroPulper eliminates the "wracking" and grief of other types of pulpers. Because there are few moving parts there is no loss of production time due to repair or adjustment. The QuatroPulper defibers the stock at low cost and produces a high quality slurry quickly and effectively.

The DynoPeller

is the heart of all DynoMachines. Its concave face is lined with rough, hard carbide particles. As the DynoPeller rotates it causes a suction at its center that pulls the stock toward it. Centrifugal force then causes the stock to flow rapidly over the rough carbide particles under a gentle hydraulic pressure. This effective dynomizing action completely disintegrates the stock . . . separating each fiber from its neighbor while maintaining its original length.

RBC 5-53

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Call SOLVAY *FIRST*

REG. U.S. PAT. OFF.

for these Paper-Making Chemicals

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And for prompt delivery service, Solvay has three centrally-located manufacturing plants... thirteen convenient branch sales offices... and a nation-wide chain of warehouses and stock points situated right in paper-making areas.

So when it's service you want, call *Solvay first* for these paper-making chemicals.

Soda Ash

Caustic Soda

Liquid Chlorine

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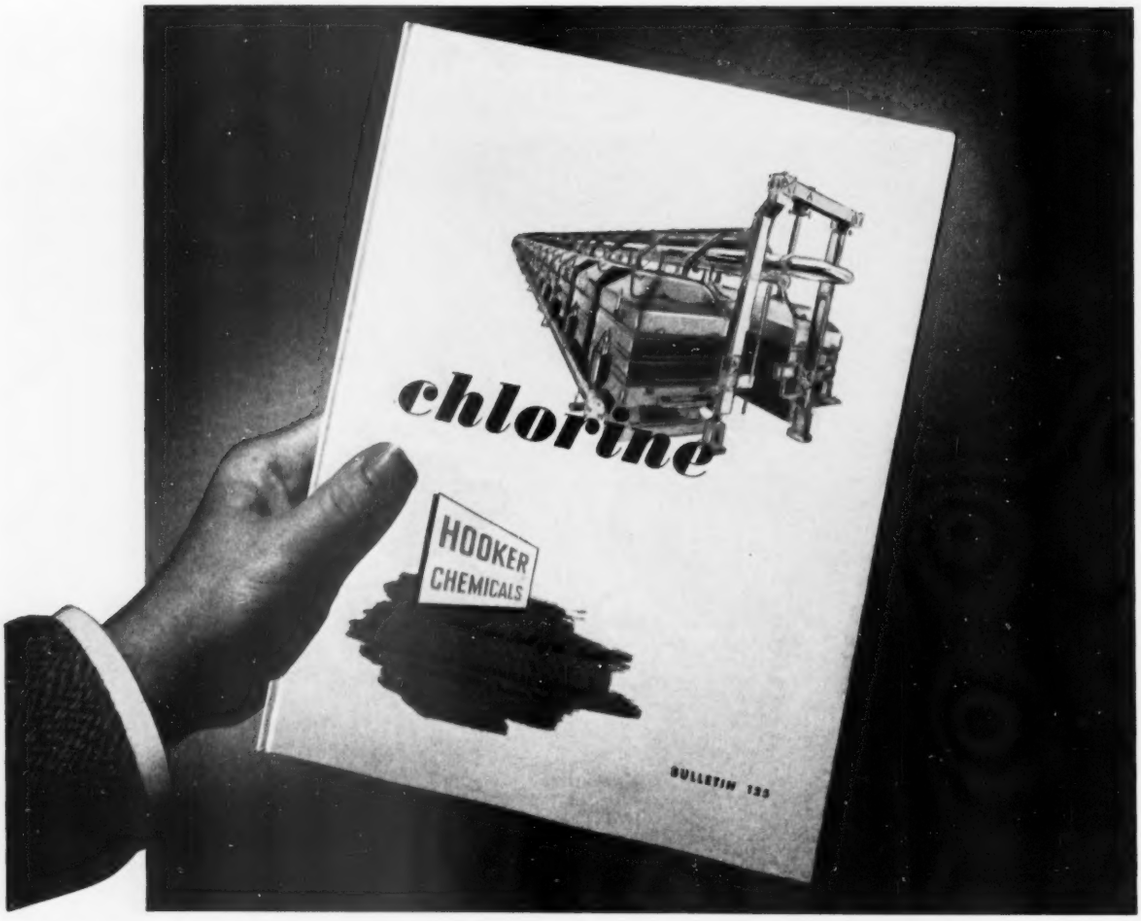
CHEMICAL AND MECHANICAL WOOD PULP

When he tripped on a stump and slid 17 miles down to the Little Big Onion River, Paul Bunyan figured logs could do the same—so he invented the Skid Road.

A reproduction of this incident from the fabulous life of Paul Bunyan—the seventieth of a series—will be sent on request. It will contain no advertising.



How to use and handle chlorine

If you buy, use or handle chlorine, this new 76-page manual contains useful information for you. Contents include:

- **Properties of chlorine**
- **Safe methods for using and handling chlorine**
- **Specifications for piping, storage, shipping containers and other equipment for handling chlorine efficiently**
- **Production of bleach liquor (lime bleach)**
- **Pulp chlorination**
- **Preparation of sodium hypochlorite**
- **Analytical procedures for hypochlorite solutions**
- **Manufacture and uses of chlorine**
- **Hooker sales, engineering, and technical services for users of chlorine**

This new manual will be sent to you without obligation. Address your request, on your business letterhead, to HOOKER ELECTROCHEMICAL COMPANY, 2 Union Street, Niagara Falls, New York.

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help you get maximum efficiency from bleach operations. Copies of these Hooker bulletins, and a list of other helpful literature, will be sent to you without obligation. Just write us today on your business letterhead.

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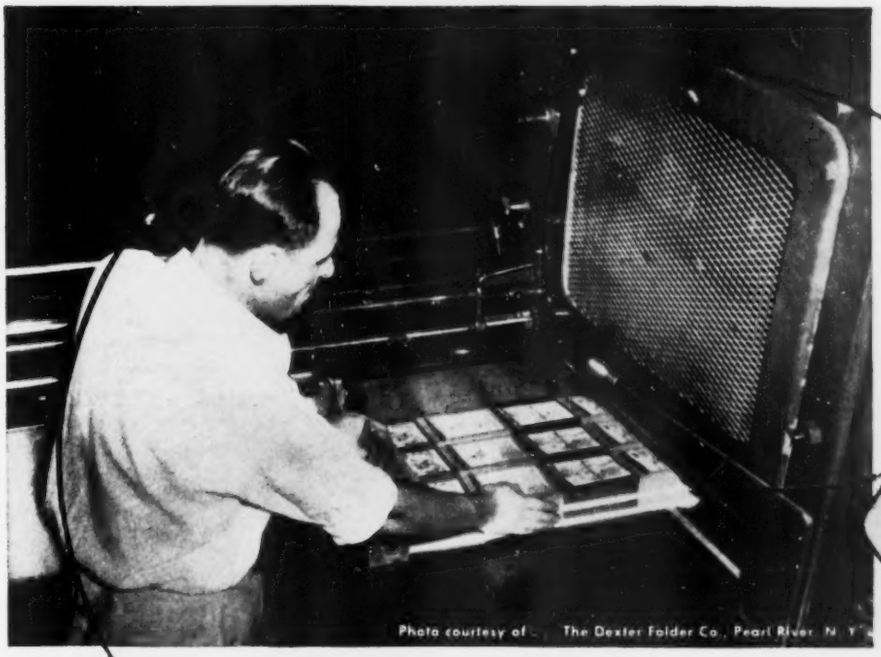

Photo courtesy of The Dexter Folder Co., Pearl River, N. Y.

it's OK...let'er go!

with OK SUPER paper trimming knives on Dexter Brackett Trimmers

The Dexter Folder Co. uses OK SUPER paper trimming knives as standard equipment on their Brackett trimmers because their ultra sharp, extra hardened super keen edges last 25% to 40% longer than ordinary knives.

In a paper mill or printing plant this means continuous operation at a lower cost, because frequent stoppages for knife sharpening are practically eliminated. Actual reports from America's largest paper mills, printing plants, etc., where OK SUPER paper trimming knives are in constant operation prove conclusively that they are unequalled for long wear under the severest service conditions.

Standard OK SUPER Knives made from fine alloy steel are beveled and hardened for all types of cutting. For tough jobs like trimming aluminum foil, cellophane, glued board, rubber, plywood, etc., they are available in special bevels, and hardnesses.

Write Dept. F for comprehensive bulletin.

Manufacturers of
OK SLITTER KNIVES
CHIPPERS
TRIMMERS
REVOLVING CUTTERS

GO WITH OHIO GREEN

THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

Asten DRYER FELTS

Fewer changes

Experienced back tenders will tell you that ASTEN quality means longer felt life—and increased production.

Economy in the long run

ASTEN-HILL MFG. CO.
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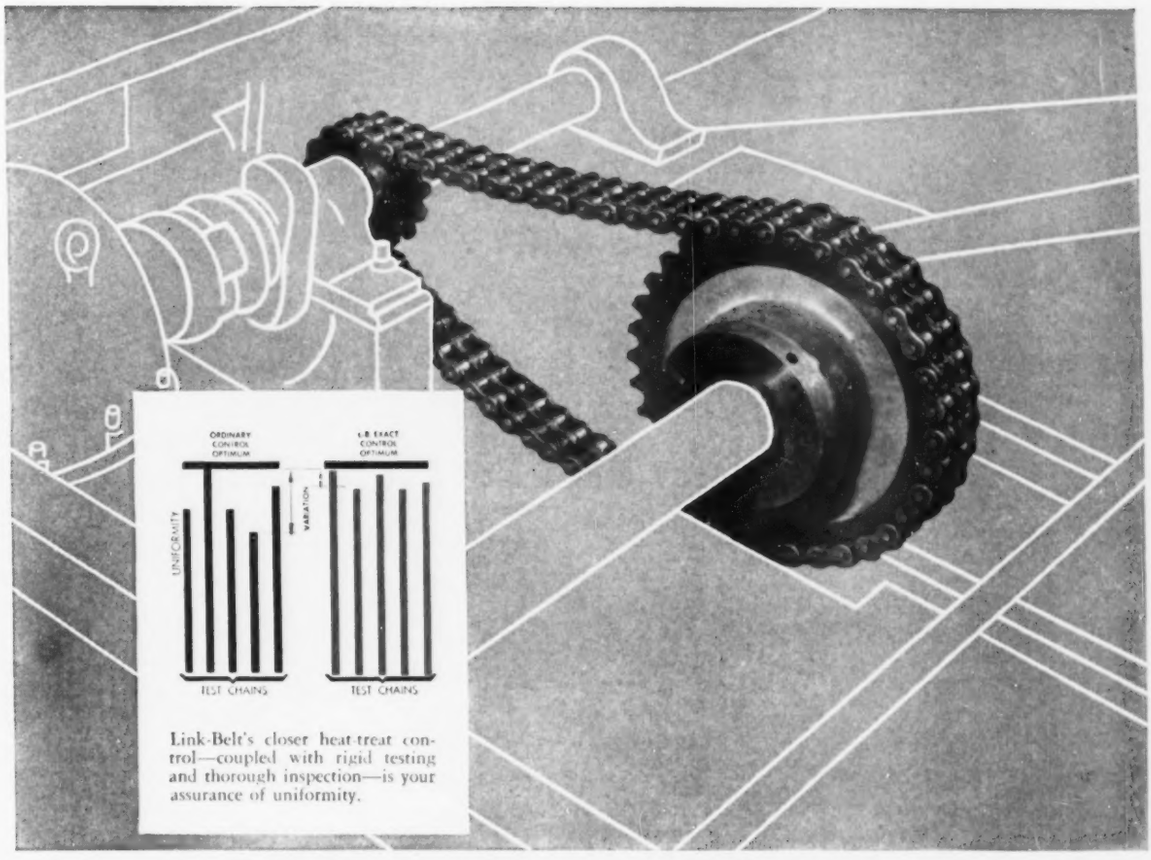


Link-Belt's closer heat-treat control—coupled with rigid testing and thorough inspection—is your assurance of uniformity.

Closer heat treat control means longer roller chain life!

But it's only one of many engineering extras you get from LINK-BELT

THE long-life record of Link-Belt Precision Steel Roller Chain is based on more than closer heat treat control. Consider such extra-wear features as shot-peened rollers and lock-type bushings. They're further assurance of Link-Belt's *built-in* extra life.

Link-Belt Roller Chain is available in single or multiple widths, $\frac{3}{8}$" through 3" pitch. Double pitch, 1" through 3". For all the facts, call the Link-Belt office or distributor near you today, or write for Data Book No. 2457.

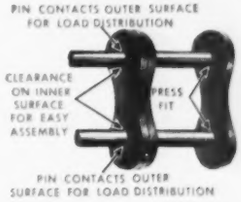
LINK-BELT

ROLLER CHAIN & SPROCKETS

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities. 13.125 A

Don't overlook these other LINK-BELT extras

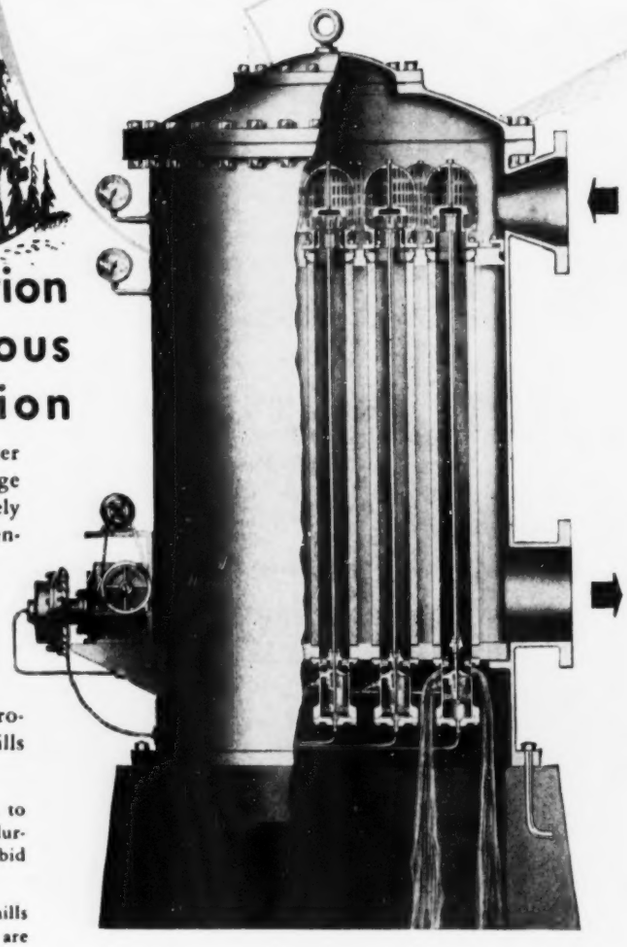
Shot-peened rollers have extra fatigue life for higher speeds, heavier loads.


PIN CONTACTS OUTER SURFACE FOR LOAD DISTRIBUTION
CLEARANCE ON INNER SURFACE FOR EASY ASSEMBLY
PRESS FIT
PIN CONTACTS OUTER SURFACE FOR LOAD DISTRIBUTION

Couple, uncouple multiple-width chains easily.

Lock-type bushings assure free articulation.

LESS DOWNTIME . .
MORE PAPER
with
ADAMS
AUTOMATICALLY FILTERED WATER



Continuous protection for your continuous machine operation

Higher production goals of today's faster machines must be protected—continuously. Large volumes of water, carrying proportionately larger amounts of impurities, need more attention than ever before.

Clean, automatically filtered water can eliminate down time due to plugged shower nozzles, helps avoid mid-week shutdowns for washing clogged felts.

Experience with Adams Poro-Screen and Poro-Stone Water Filters in pulp and paper mills from coast to coast has proved:

1. Continuous filtration can be relied upon to remove all objectionable impurities, even during seasonal conditions of highly turbid supply.
2. Production continues in Adams-equipped mills when others using the same water source are shut down for cleaning.

Write for your copy of the new 20 page booklet on water filtration in the Pulp and Paper Industry, Bulletin No. 691.

R. P. ADAMS COMPANY, INC.

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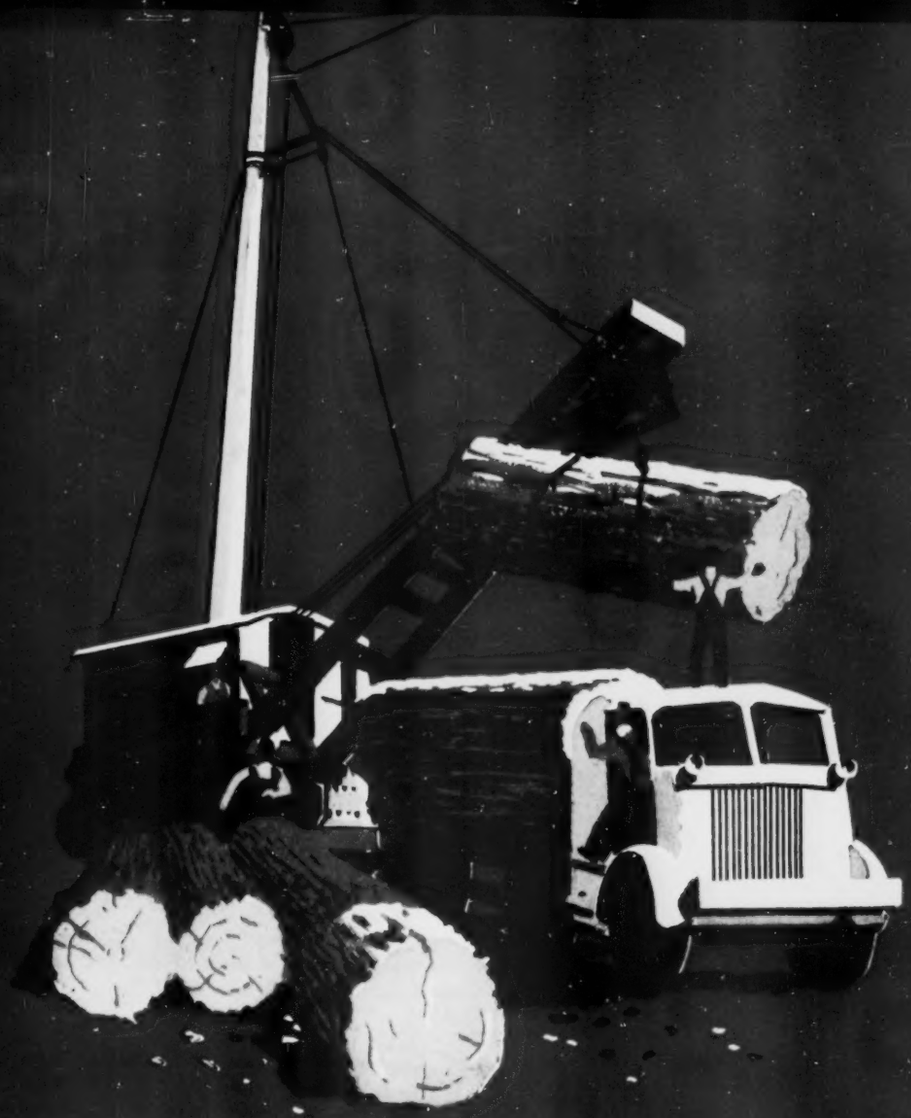

FOREST RESERVES

Puget Sound owns or controls extensive timberlands in the Pacific Northwest, and its operations extend from the felling of the trees to the final delivery of finished pulp. Every log is completely utilized; modern hydraulic barkers and chippers result in reducing waste in wood utilization by 20%, and wastes are fully utilized in the alcohol and by-products plants.

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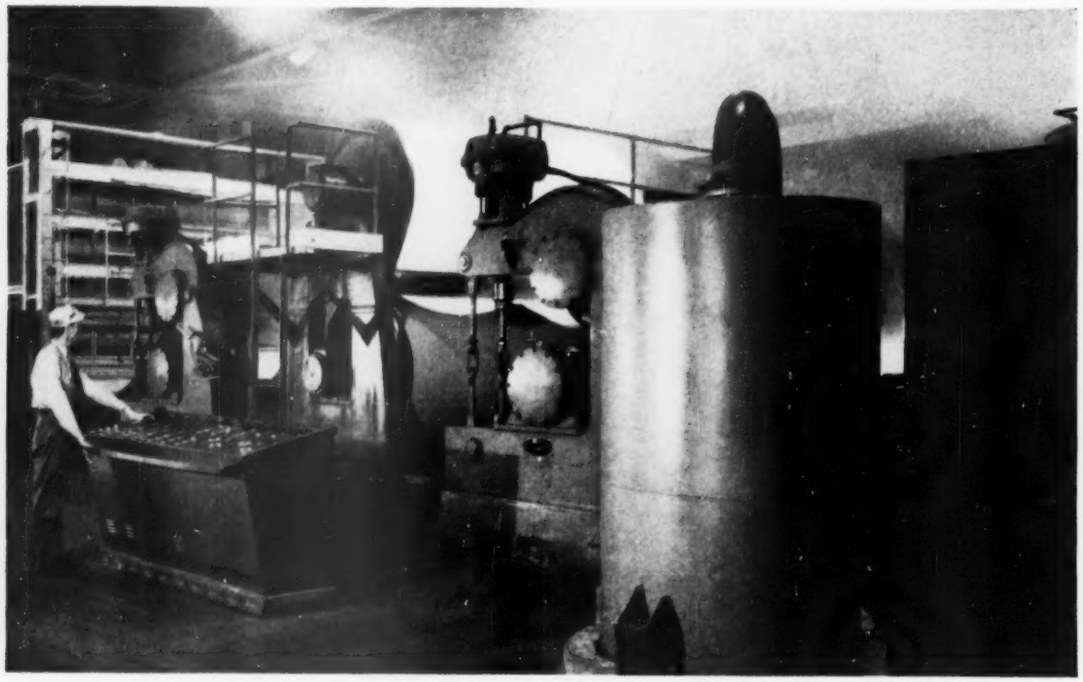
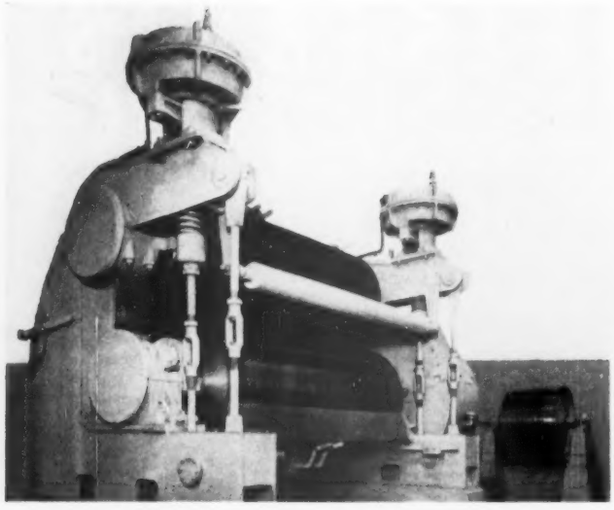
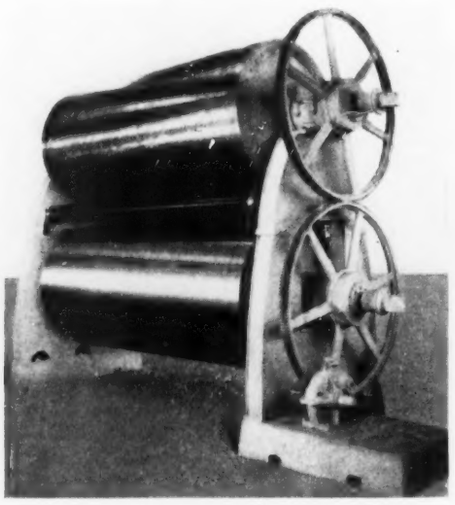


Built to exacting specifications for individual requirements in various sizes up to 156"—for as high as 300 tons per day per machine! Note air-loading for all press rolls.

IMPCO FELTLESS



Main air-loaded press sections with 36" diameter grooved press rolls—shown here from tending side.



View from drive end of 60" diameter pre-dryer section.

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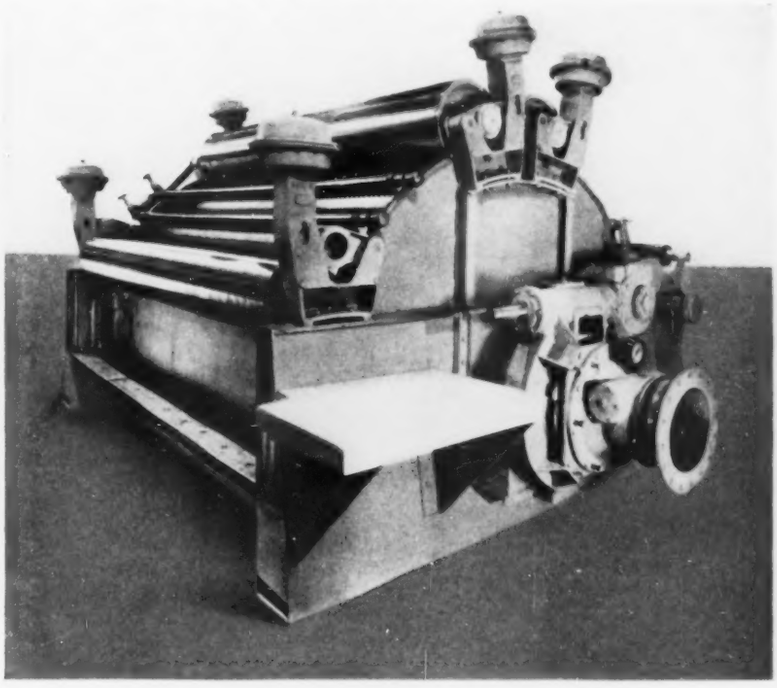
RUGGED DEPENDABILITY

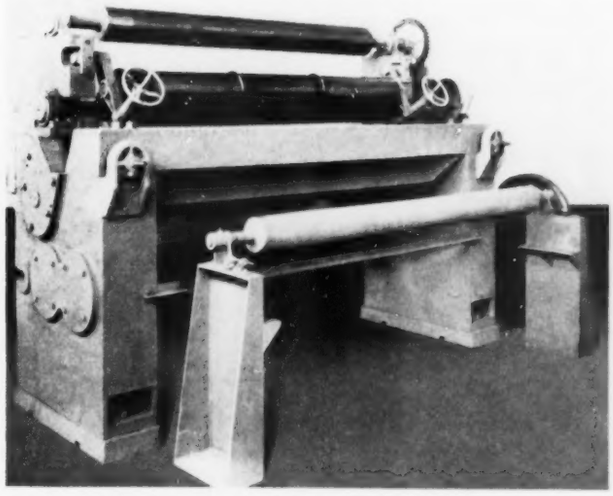
Producing sheet densities in the range of 50% to 60% A.D. on all types of chemical, semi-chemical and groundwood pulps—the Impco Feltless Wet Machine contains a number of features new to wet machines all combined to give you long-lasting, top quality service.

Air-loading for all press rolls—extra-heavy enclosed herringbone gear drives on the press sections—new inverted type sheet cutters are but a few of the advantages incorporated in this exceptionally rugged feltless wet machine manufactured by Impco.

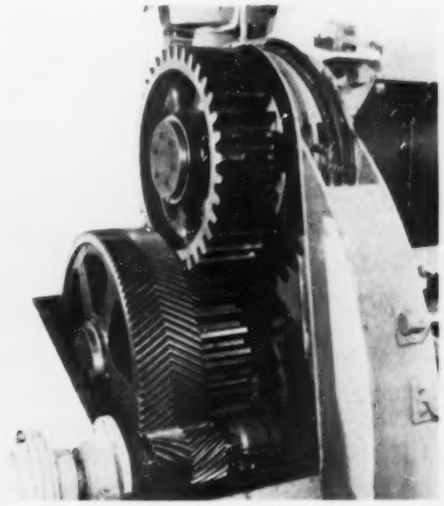


View from valve side of 8' diameter vacuum thickener for wet end showing air-loaded forming and press rolls.

WET MACHINES!



The complete unit can be installed prior to dryer sections or this Impco Slitter and Cutter can follow the final press to produce sheets of any desired size for shipping wet.



Main press drive case disassembled to show rugged herringbone gear and pinion and special long-tooth synchronizing gears.

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J-30

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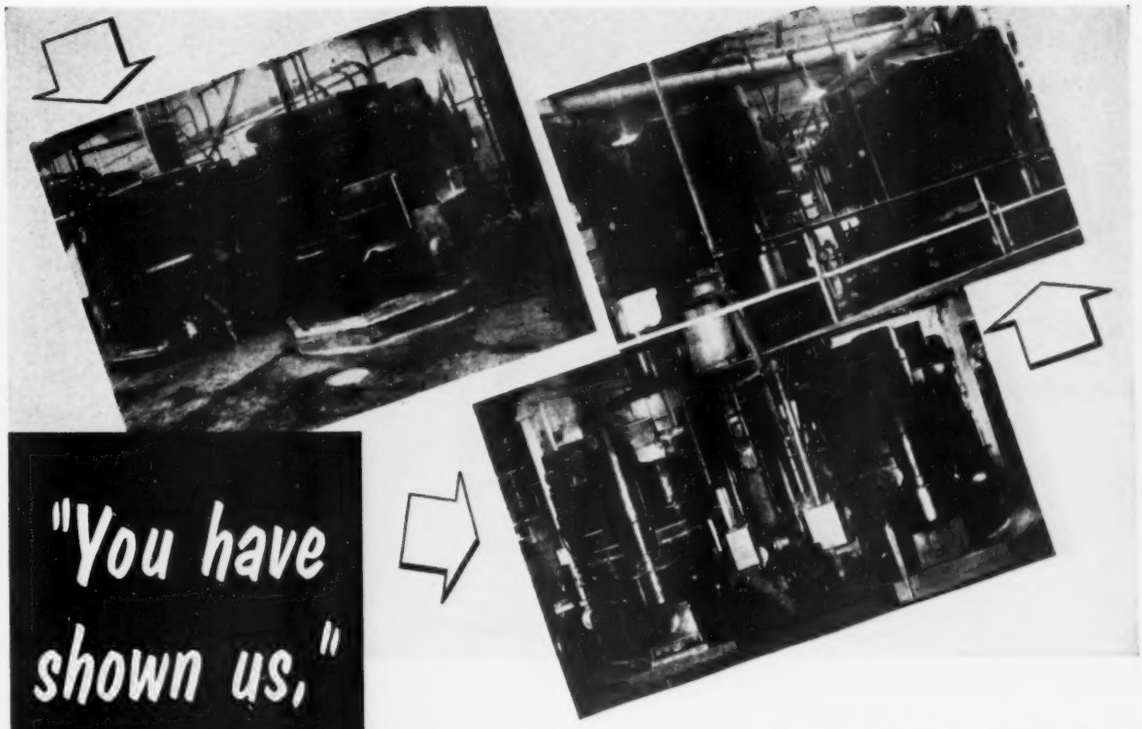

"You have shown us,"

MILL MANAGEMENT SAID

Naturally, mill management men wanted proof that the Curlator would do the things we claim. They had to have proof—and rightly so—that Curlators

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- would impart more desirable properties to their finished paper . . .
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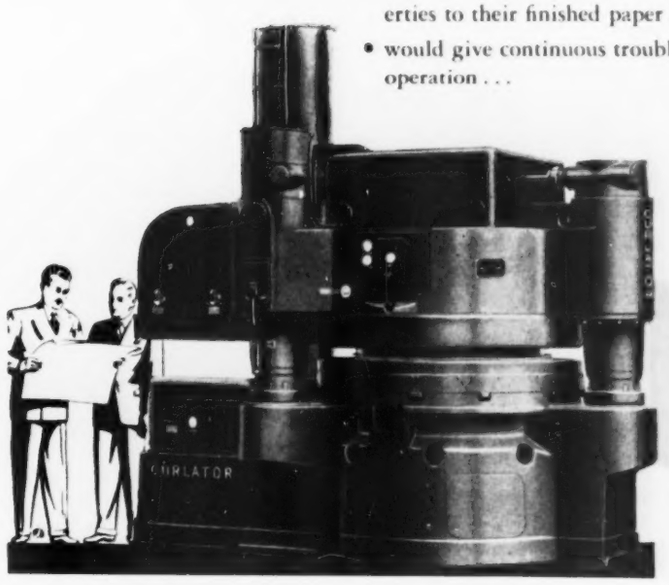
- would pay for itself in a reasonable length of time.

Yes, mill management said, "You had to show us before we bought two, three or four Curlators." What happened? The first Curlators proved themselves so well that management in a number of mills, like the three pictured above, purchased additional machines to increase their curlated pulp tonnage.

Let us prove to you what Curlators can do for you . . . how the Curlator will pay for itself.



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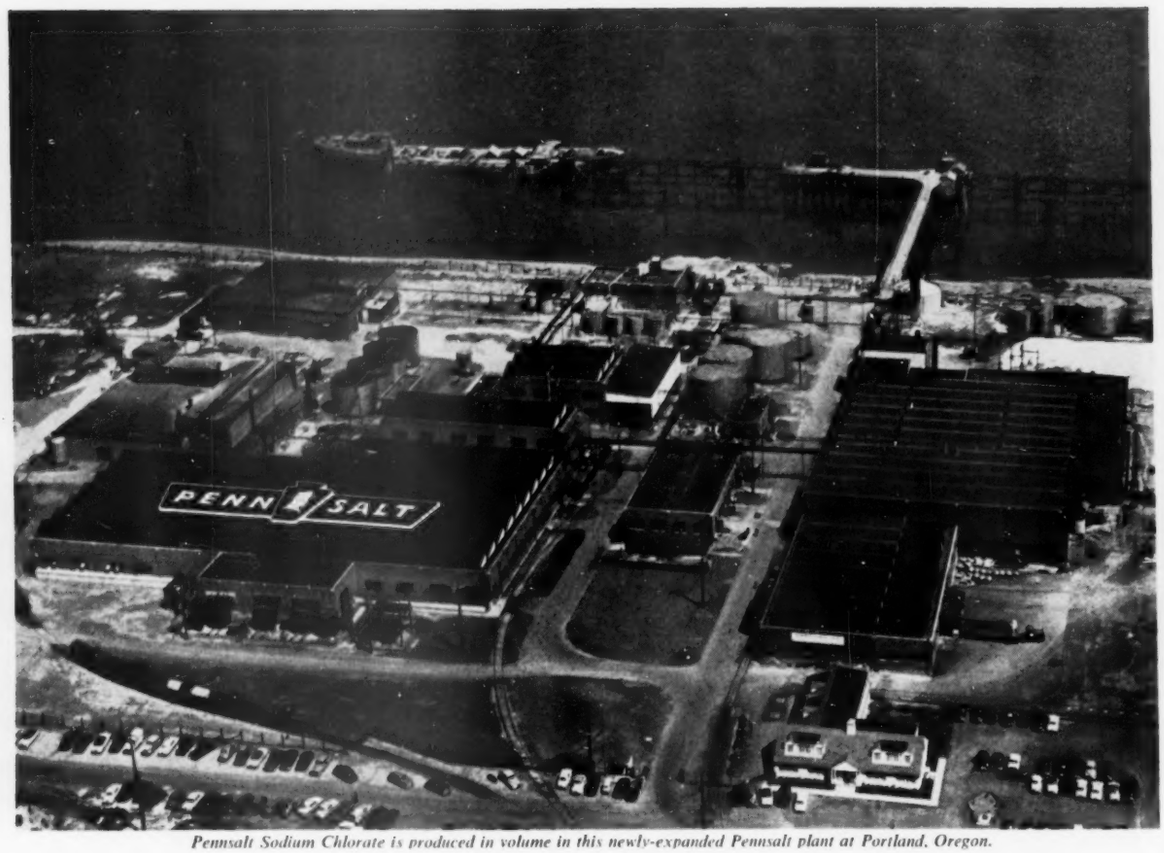

Pennsalt Sodium Chlorate is produced in volume in this newly-expanded Pennsalt plant at Portland, Oregon.

for whiter, brighter pulp turn to

PENNSALT SODIUM CHLORATE

The advantages of Chlorine Dioxide as a bleaching agent are well known. This chemical, produced from Sodium Chlorate, bleaches pulps for certain purposes more advantageously than ordinary commercial bleaching agents. Furthermore, Chlorine Dioxide is a selective bleach. It has the power to destroy wood specks and bark specks, thus giving a cleaner end product —yet it does not impair the pulp's physical or chemical properties. This selective bleaching agent also enables a pulp mill to make use of a higher percentage of the wood raw material.

PRODUCED IN YOUR OWN PLANT

In a properly constructed generator, the manufacture of Chlorine Dioxide begins with Sodium Chlorate—the chemical that Pennsalt produces at its Portland, Oregon, plant. By treating Sodium Chlorate with sulfuric acid, and sulfur dioxide or organic reducing compounds, Chlorine Dioxide may be generated at the bleach plant site.

A FREE TECHNICAL SERVICE

To help you take advantage of this new process, Pennsalt offers both chemical and technical assistance. Pennsalt specialists will gladly aid you in designing a generator and other equipment, and thoroughly acquaint you with this new bleaching process.

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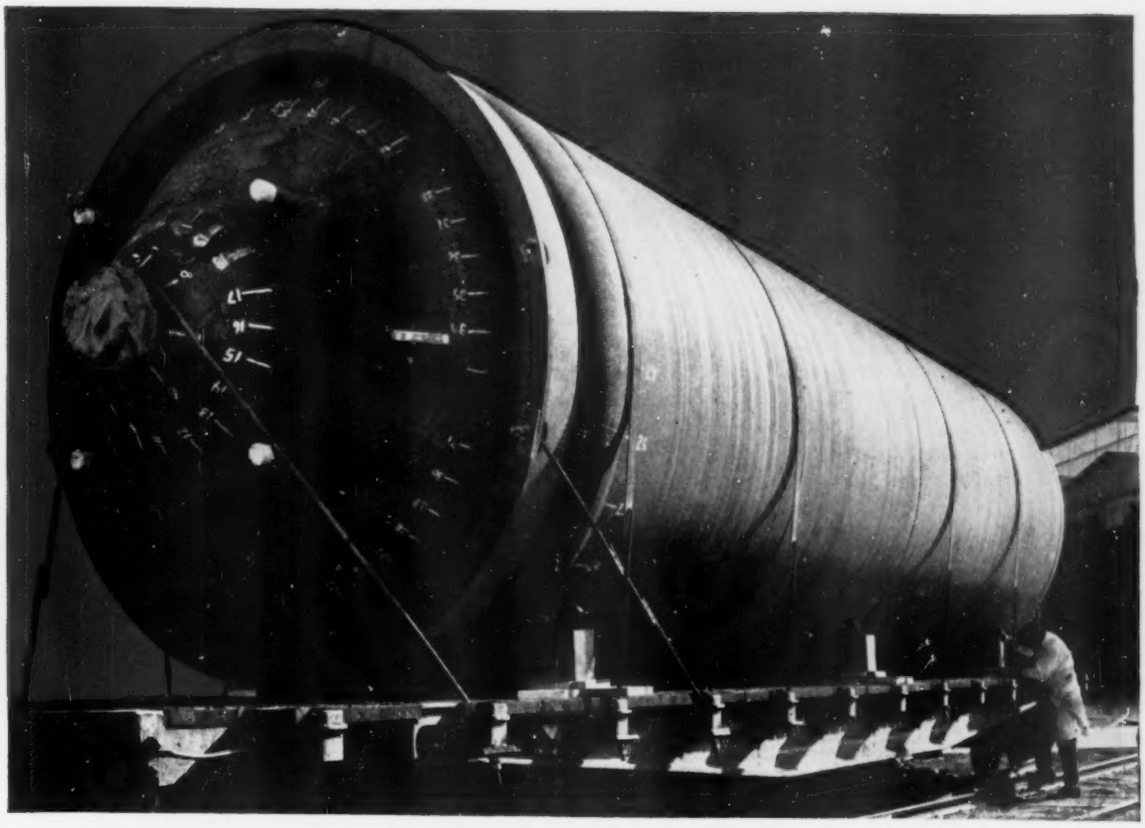
Pennsalt Chemicals



10' 7" diameter, 42 feet high sulphate digester, weighing 130,000 lbs., made of Oxygenated Rimming Steel for corrosion resistance, leaving A. O. Smith Plant in Milwaukee.

Now we're making Sulphate Digesters of

Oxygenated Rimming Steel*!

A. O. Smith Research in Metallurgy and Welding makes another significant contribution to the Paper Industry . . .

Carbon steel with low silicon content, oxygenated by rimming, to obtain desired corrosion resistance, now becomes ideal material . . . in the hands of A. O. Smith technicians . . . for fabricating sulphate digesters.

Digesters made of this special steel, 2 to 2½ inches thick, were *first* developed by A. O. Smith. They have been in service for over two years with American Box Board Company, Crown Zellerbach Corp., Longview Fibre Company, Rayonier Incorporated, Union Bag & Paper Corp., West Virginia Pulp & Paper Company, Weyerhaeuser Timber Company.

Successful application to sulphate digesters is due to the investigations by the A. O. Smith metallurgical research laboratories, in cooperation with the A. O. Smith welding research laboratory.

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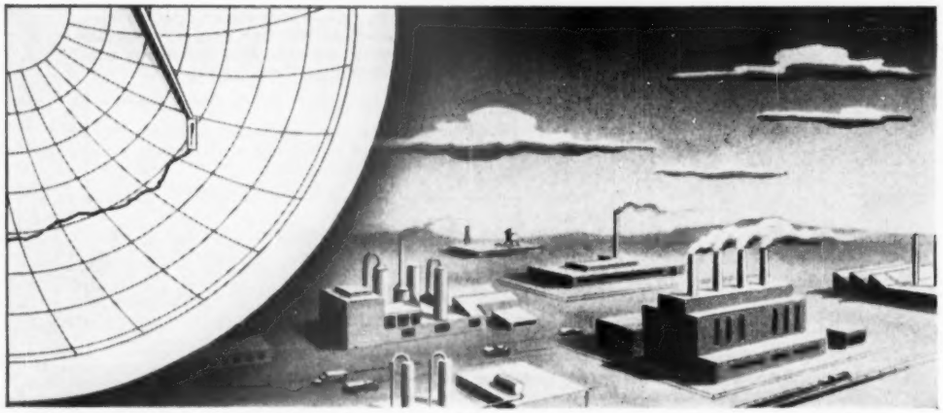
Honeywell for greater



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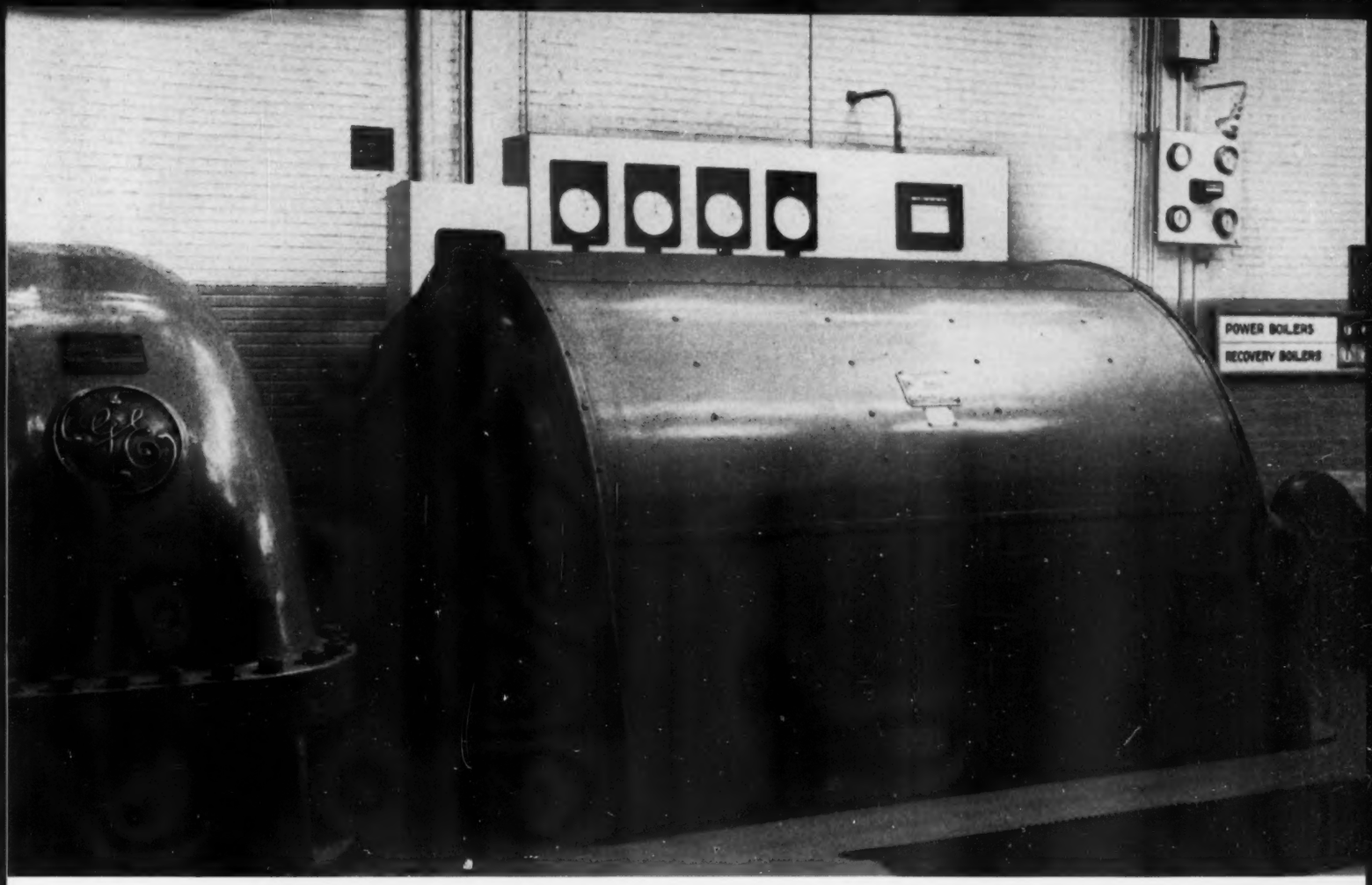

BIG SOUTHERN KRAFT MILL *uses these and many other Honeywell instruments in its power plant. Instruments on this panel cover turbine steam flow, pressure reduction control and desuperheat temperature control.*

instrumentation . . .
power plant efficiency

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Conkey Long Tube Type Evaporators for the concentration of sulphate, soda and semi-chemical black liquors meet the economy and continuous automatic operation requirements of modern pulp mills.

Each Conkey Integral Type Evaporator Body is a unit construction comprising heating element, vapor body, and centrifugal type entrainment separator in a single self-supporting body. This integral body is completely assembled in our shops and shipped to the field as a unit, where it is set in place in one up-ending operation, thus reducing field assembly and erection to a bare minimum. Fewer joints for vacuum leakage, less maintenance and smaller floor space, and housing where required, are designed-in advantages.

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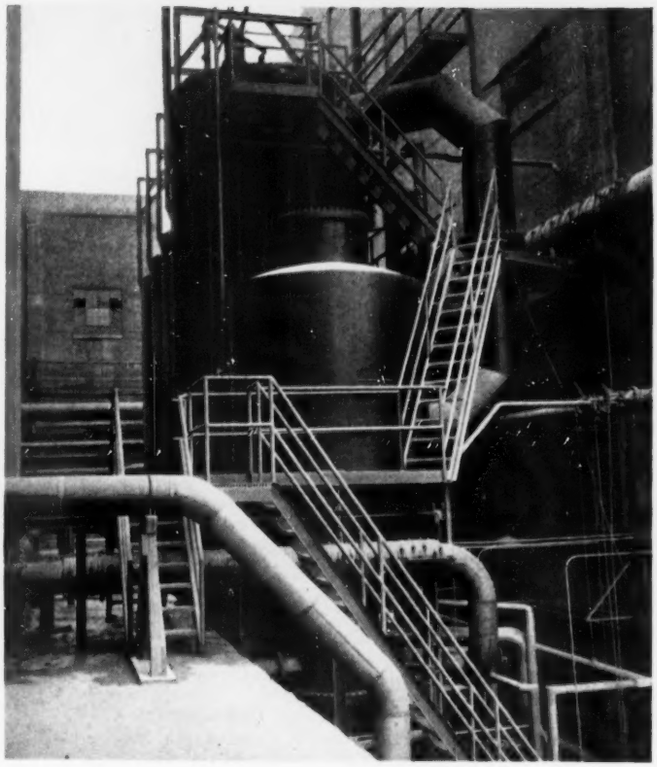

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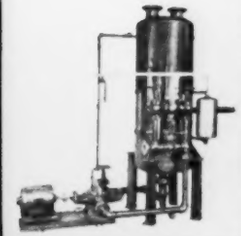

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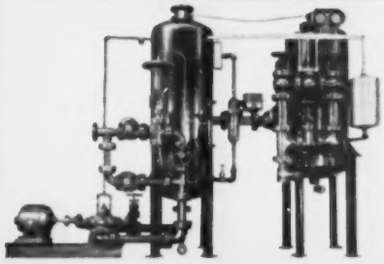

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Improved quality. Uniform drying.

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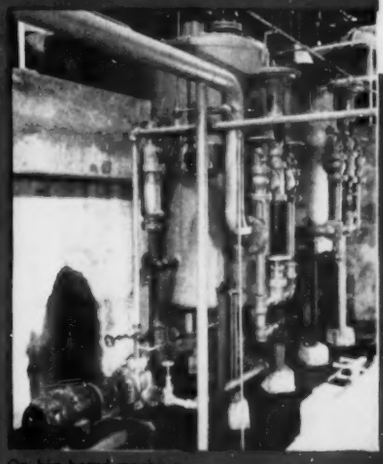
Moisture content control. No over-drying.



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PULP & PAPER'S OWN REPORT ON "THE NEW WASHINGTON"

'FRONT DOOR' STORY

TWO CABINET MEMBERS, OTHER OFFICIALS TALK FRANKLY

"OUR LONG-TERM SECURITY as a nation—the leading free nation of the world—depends on two things: Strong industry and strong government. Industry must remain free and competitive and government must be composed of the strongest individuals available to keep it that way." In these words R. A. McDonald, organizer of the new East Texas Pulp & Paper Co., director of Crown Zellerbach Corp., and a former director of the National Production Authority, simplified the problem of industry-government relationship for a Paper Week audience in New York in February.

To see what steps are being taken by a new administration to encourage free and competitive industry and to establish a government composed of strong individuals, two PULP & PAPER editors spent a week in late March studying at first hand the "New Climate In Washington." During the course of this visit they talked at length with two cabinet secretaries; assistant secretaries and under secretaries in three departments of the government; and with various heads of departments and divisions whose activities directly affect the pulp and paper industry.

Let there be no mistaking the fact that there is a "new climate" for business in Washington! The welcome sign is sincere, and the new government policy directors not only welcome but actively seek the counsel of industry, its trade associations, and the publications that serve the industrial field.

The first orders of business in Washington are balancing the budget and staffing top policy-making jobs with men sympathetic to the administration.

In the case of the first, it is inevitable that stream-lining and budget slashes will result in the discontinuance of many government services for industry. So that now is the time for industry to examine its relationships with government and to speak up in behalf of services which should be retained. The administration is very serious about its promise to balance the budget, and in the course of the balancing many departments, divisions and agencies will be abolished, and many government publications and statistical services will be eliminated.

Probably in most cases such elimination is desirable in getting government out of business and putting industry back on its own responsibilities. But where there are necessary services which only government can provide, industry should make its representations at top-policy levels—and now.

As of this writing, an executive order by President Eisenhower has cleared the way for removal from top-policy levels civil service carry-overs from the past 20 years who are not sympathetic to the new administration. Many of these men are the so-called "planners," some have been close to the forest products industries, and if they have not been removed by now they soon will be.

Agriculture—Forest Service

Ezra T. Benson, secretary of Agriculture, has one of the difficult jobs in an economy-minded administration in getting budget reductions through a Congress that traditionally favors agricultural expenditures. His original budget, submitted to the House in March, proposed a cut of $131,400,000 from that submitted by former President Truman.

However, there was an increase of $13,300,000 in the suggested budget for the Forest Service, with most of this money ear-marked for building access roads to fight insects and fires in old-growth and damaged timber areas, rather than to extend the forestry program.

As a Westerner, Mr. Benson probably has more background in forestry and its problems than any of his predecessors for some time back. He is sympathetic, for example, to the feeling that there is enough, or perhaps even too much, forest land now held in the public domain. There is no intention on his part to add to these lands, and, just as important, no intention to increase any regulatory activities of the Forest Service over pulp and paper and the lumber industries.

There is an expressed confidence by Mr. Benson in Richard McArdle, chief of the Forest Service, and there is no indication that there will be any wholesale re-vamping of the service either for economy or political reasons. As a matter of fact, it seems to be understood that the USFS will continue pretty well along the lines established when Mr. McArdle took over in mid-1952.

Although there has been a lot of talk about transferring the Bureau of Land Management from Interior to Agriculture, as recommended in the reorganization plan of the Hoover Commission, it is generally felt in both departments that there is too much political dynamite in this, with stern opposition developing whether the consolidation is effected either in Interior or Agriculture. As a matter of fact, the reorganization plan submitted to Congress by President Eisenhower in March carefully omitted such a recommendation.

Under the present revised grouping of Agriculture Department agencies, the Research, Extension and Land Use Agency is headed by J. Earl Coke, assistant secretary, with the Forest Service grouped with Soil Conservation Service, Extension Service, Bureau of Agricultural Economics, Agricultural Research Administration and Agricultural Conservation Program.

Japs in Alaska. Although two Japanese delegations have been in the U.S. during the past months to discuss the possibility of getting lumber and pulp supplies from Alaska, nothing has come of it and probably nothing will, Forest Service officials feel. The Japanese need lumber and they need rayon pulp, and there may be State Department sympathy for their needs. But the USFS has pointed out to the Japanese commissions that the immigration laws would not permit establishment of a labor colony of Japanese in Alaska to do the logging and primary manufacture, and that it is against the policy of the Department of Agriculture to have raw material exported from the public domain. The first Japanese plan was to ship logs, but this was pointed out as contrary to policy as was their second proposal to ship timber squares. As this situation now stands, the Japanese have been told the only way they could get West Coast timber or pulp was through the cooperation of an American company and capital, and use of American labor.

Colorado Mill. With the forfeit of the option of the Columbine Pulp & Paper Co. for 4,500,000 cords of pulpwood from the White River National Forest in Colorado, this deal is now definitely off, Forest Service officials said (as PULP & PAPER reported exclusively in March). However, the service is very much interested in establishment of a pulp mill on the west slopes of Colorado to utilize the beetle-killed spruce in the area and hope to have a chance to consider further proposals.

Interior Department

As with Mr. Benson in Agriculture, the government has in Douglas McKay, as secretary of Interior, a man completely familiar with forestry and forestry problems. As governor of Oregon he has spoken and acted firmly in opposition to federalization of forest lands, and the encroachment of government agencies on the rights of private industry or the authority of local and state governments. He says he is not looking to build a personal empire with his department, and he feels its function is not to *promote* activities in the public interest but to await the dictum of the people and then act.

Mr. McKay has already been faced with problems arising from the creation of the 900,000-acre Olympic National Park by the previous administration. He expresses belief in the reservation of certain small areas for preservation in their

natural state as national parks, but does not favor the withdrawal of large tracts into such parks. His policy regarding the Olympic park deal will be to await a study and recommendation by a local commission appointed by Governor Langlie of Washington, before making a decision.

In the case of Alaska, Mr. McKay will work for the development of this area and feels that if it is admitted to statehood certain lands should be allocated for development under homesteading.

Regarding reorganization and consolidation, Mr. McKay favors streamlining activities and removal of overlapping interests of the various services having to do with our forest lands, and he feels that if there should be a consolidation of the Forest Service and the Bureau of Land Management it should be under Interior. But the chance of conflict here with Agriculture is remote, because, as it has been observed earlier, this consolidation will not be proposed.

Commerce Department

Changes in the Department of Commerce, as a result of the abandonment of NPA, are taking place so fast that top-policy officials are not sure where they stand. And the important thing here is to decide what functions performed by NPA divisions will be retained by Commerce. More than 1500 staff members had been relieved by April 15 and another 500 are slated to go by May 15.

An example of extent of staff reduction is the Forest Products Division of NPA. This division, which incorporates the former three divisions of Pulp, Paper and Paperboard, Lumber and Wood Products, and Printing and Publishing, was operating in early April with 12 employes, as compared with 65 persons formerly employed by the Pulp, Paper and Paperboard Division alone.

When NPA was created in 1950 and placed under the Department of Commerce, the existing industry divisions under Commerce were transferred to NPA along with the normal domestic and international functions of the department. If DPA is not extended beyond June by Congress, what will happen to the industry divisions? Will some of the peacetime functions be resumed by Commerce, or will the industry divisions be abandoned altogether?

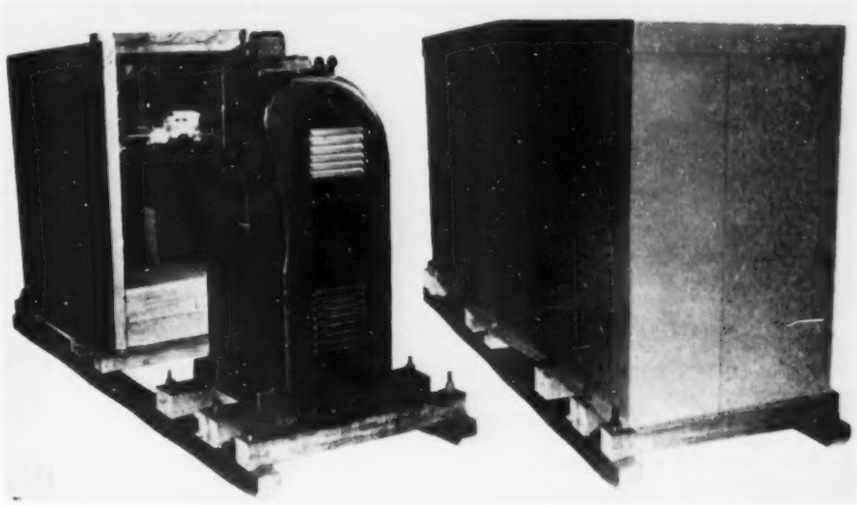
Mr. McDonald, of Crown Zellerbach, who was quoted at the beginning of this story, has strongly advocated cooperation between industry and government and has proposed the training of young industry men in government service for short periods of time. But the question now is can this industry interest be obtained if there are no real functions to perform?

Walter Williams, under secretary of Commerce, and Craig Sheaffer, assistant secretary in charge of domestic commerce, tried to find some answers for PULP & PAPER to these questions. But it is still too early to know what the program will be or how Congress will act. It is indicated, however, that the department favors retention of consolidated industry divisions, with these divisions headed by men from industry with a career man as deputy, and with the division heads chosen after consultation with the industries affected.

These industry divisions would be advised by industry advisory committees, as under NPA, and would provide essential commodity service for all executive branches of the government and would act as a centralized industry contact in Washington. Commerce officials promise that the advice of industry advisory committees will be heeded, and that there is no intention to put these industry programs in the hands of the "planners."

It is felt that the Forest Products Division has rendered, on the whole, good service to the industry, and it has been outstanding in its close cooperation between industry members, the trade associations and journals. It might be that this division could function acceptably along the lines indicated with as few as six staff members, to which size it may already have been reduced.

GAYLORD'S NEW PAPERBOARD PACKAGE



LEFT—the old method was to package this 3600 lb. engine lathe in wooden crate, with paper bag to keep out dirt.
RIGHT—The new "package" developed by Gaylord and the shipper. It is solid fiber on wood skid—saves time and cost and weight.

Gaylord Container Corp. and Cincinnati Metalcrafts, Inc., have developed a new "package" for the protection and shipment of a 3600 lb. engine lathe, saving 50 to 75 percent in costs and 55 percent in the weight of the package.

Formerly the 3600 lb. engine lathe was covered with a large paper bag to keep out dirt and housed in a nailed wooden crate.

The new method is to build a solid fiber container which completely encloses the lathe. This is done by capitalizing on the wooden skid on which the lathe rests. A simple vertical wooden frame bridging the center of the lathe is constructed and a stapling hammer used to attach six pieces of .100 solid fiber to the skid and vertical wooden frame. The final step is to staple and tack a lid to the top portion of the fiber and vertical wood frame.

The result is a streamlined, dust resisting "package" peaked in the center to shed showers that might fall during transportation. The principle is adaptable to machine tools of varying sizes. It can be assembled by two men in 30 minutes instead of four hours.

Radio Equipment Widely Used In Pulp and Paper Industry

More than 800 approved systems for radio communication were in use in the forest products industry during 1952 according to Lester W. Spillane, assistant chief, safety and specifications bureau, Federal Communications Commission, Washington, D.C. This radio equipment finds use in fire fighting, servicing of mobile equipment, and in the control and ordering of equipment at construction sites.

The forest products industry works on frequencies in the band between 44 and 50 megocycles, with some 40 frequencies being available, some of which have to be shared with other industries. The base stations and mobile units facilitate operations in all tree logging, tree farming and transportation.

Mr. Spillane points to the sharp competition for frequency allocation, and says the forest products industry should be vigilant to protect its assignments, and should also cooperate within itself in the use of its channels.

Under present conditions, it takes approximately 90 days to process an application for a base station by F.C.C. Applications can be made for construction and a license permit at the same time to speed up the approval process.

The Tariff Issue Is Joined

THE U.S. INDUSTRY'S STAND—

A SLOGAN of the Eisenhower administration, "Trade—not Aid," has struck fear into the heart of many a business man, and it has been a matter of considerable concern to the pulp and paper industry. The administration, of course, in its economy moves is eager to cut down its expenditures for foreign aid and has suggested some liberalization of import policy for free world nations and this program is now being supported by some business organizations. No specific proposal has been made as this issue went to press, but proponents of the trade—not aid policy favor extension of Reciprocal Trade agreements beyond the June expiration date, and the repeal of quotas and limitations on imports.

These facts have been ascertained by a recent visit to Washington, D.C., by two PULP & PAPER editors and by industry contacts.

The support of 125 national organizations and individual enterprises to fight these proposals has been enlisted in a group called the Nationwide Committee of Industry, Agriculture and Labor on Import-Export Policy. This group has been sponsored by the National Labor-Management Council and will act as a public information bureau to call attention to the present low level of tariffs and to oppose any further reductions.

The pulp and paper industry feels it has a special case to present, and its representatives may by now have laid the facts before the House Ways and Means Committee which was to begin consideration of the Reciprocal Trade Agreements Act in mid-April.

Historically, the position of the industry goes back to the fact that the second law ever passed by Congress was one placing a duty on paper—an early recognition of the importance of this commodity to the country. With the exception of standard newsprint there have been duties on papers ever since.

In 1911 a reciprocal trade agreement was worked out with Canada to place newsprint on the free list. This agreement was confirmed by Congress but not by the Canadian Parliament—as a result of which newsprint is duty free into the U.S. but dutiable from U.S. into Canada.

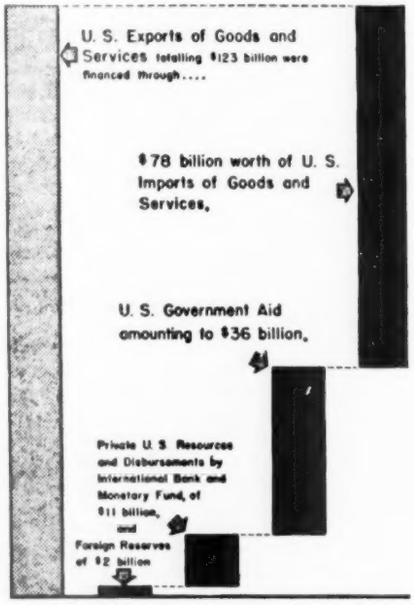
The net result of this situation is most revealing, since at that time (1911) the U.S. was manufacturing about 75% of its newsprint, whereas today Canada manufactures between 75% and 80% of newsprint consumed by this country. Paper, unlike an automobile, is made exactly the same in every country—from the same raw materials, the same equipment and with the same methods. The cost of labor then becomes the deciding factor, and the high labor costs in this country means that any foreign country can make newsprint, or any other paper, cheaper than the U.S. So that over the long pull, if there were no paper tariffs we might expect for other papers the same situation applying to newsprint.

At the time of the negotiations in Washington for the Tariff Act of 1922, the pulp and paper industry took the position which it has maintained ever since. This is a position calling for neither prohibitive or protective duties, but a tariff which would permit domestic industry to compete in its own market on the same terms as foreign manufacturers.

The Smoot-Hawley Tariff Act of 1930 placed high tariffs on many commodities, but not on paper. Before this the average duty on paper was 25% and the 1930 act raised this only to 26%. When the Reciprocal Trade Agreement Act was passed in 1934 the expressed intention was to permit negotiation of lower tariff rates to get back toward those established in 1913

(Continued on next page)

FROM 1946 THROUGH 1952.


U. S. Exports of Goods and Services totalling $123 billion were financed through....
$78 billion worth of U. S. Imports of Goods and Services.
U. S. Government Aid amounting to $36 billion.
Private U. S. Resources and Disbursements by International Bank and Monetary Fund, of $11 billion, and
Foreign Reserves of $2 billion

NOTE: Errors and omissions of 4 billion excluded from data.

Proponents of "Trade—Not Aid" program hope through increased trade with the free world to reduce the cost of government aid—shown here to be $36 billion for the period from 1946 through 1952.

THE CANADIAN VIEWPOINT—

POSSIBLE EFFECT of tariff removal on Canada's busy but compact fine paper industry (half of this is book and magazine paper) is emphasized in a booklet issued by the Canadian Pulp & Paper Association. It says any drastic change in the trade would have "certain and perhaps violent economic repercussions."

The fine and book mills in Canada have increased production over 60% since 1944 and make 500 varieties of paper.

While the consideration of removing tariff barriers between Canada and the U.S. on fine and book papers is considered by many in Canada to be purely academic, according to a survey by PULP & PAPER'S Canadian editor, he also reports considerable agitation in certain quarters in Canada for a freer flow of commerce in this commodity and further tariff reduction. Significantly, one of those in favor of this is Douglas W. Ambridge, president of Abitibi Power & Paper Co. which owns Provincial Paper Ltd., a fine paper producer using the American-developed and patented Consolidated coating process under license.

Mr. Ambridge has advocated tariff removal on the ground that the forests of the continent could more easily maintain a perpetual supply of wood and that both countries could maintain higher productivity if there were not the present restrictions at the border.

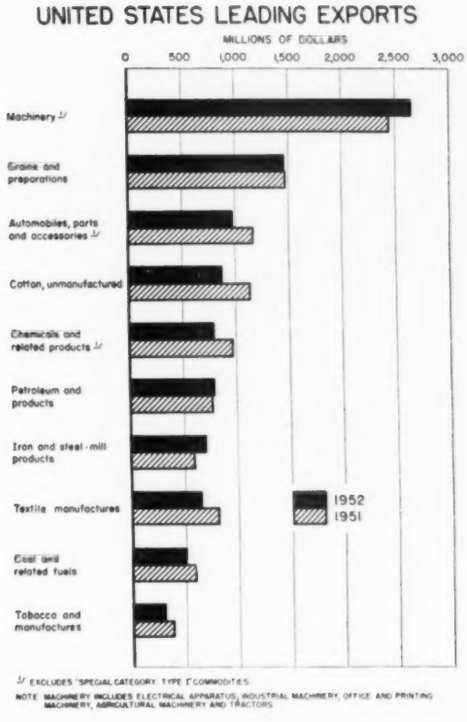
This was a subject touched upon recently by R. M. Fowler, president of the Canadian Pulp & Paper Association.

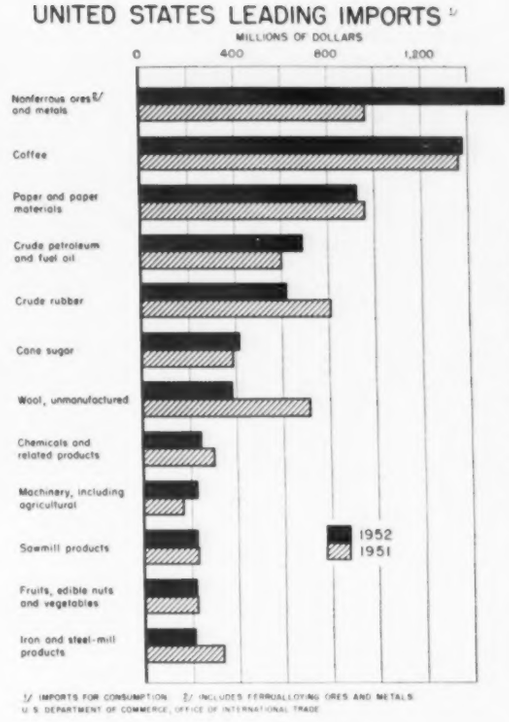
In the past, most of the support for tariffs on fine paper in Canada has been from fine paper manufacturers who have geared their operation to take full advantage of the prevailing situation. Since the tariffs keep out competitive lines from the U.S. to a considerable extent, the Canadian mills, though catering to a relatively small and scattered market, have had to be exceptionally versatile.

This situation has, of course, made the Canadian fine (including book) paper mills vulnerable should the tariff suddenly be removed and leave them open to competition from the U.S., according to Canadian leaders.

"Altering the flow of fine paper from east and west to north and south could produce casualties amongst Canadian mills which are sometimes the sole support of substantial communities," declares the association's new booklet. "The merchandising of Canadian fine paper would, too, be greatly influenced by business conditions in the large American market and the fine paper mills would depend for their existence on the tariff policies of a nation noted, to put it gently, for rapid, capricious and volatile tariff action. Finally, the Canadian mills would be faced with the need of making tremendous capital expenditures to convert their output to the needs of the new market."

Canada imports about 8,000 tons of fine paper annually, falling into more than 40 customs categories and largely representing special purpose papers and specialties not made in Canada. Most of this paper is from the U.S. Canada's fine paper mills produce some 200,000 tons of paper annually, valued at about $67,000,000. Book and magazine paper account for about half the total.





THESE TWO CHARTS well illustrate why the pulp and paper industry opposes any reduction in the tariff structure on paper. Although ranking as the sixth largest industry in the country, the dollar volume of its exports is so small that it does not even appear on this chart of U. S. Leading Exports, on the left. At the same time, paper and paper materials ranks third on the list of leading imports as shown by the chart on the right. The volume of paper imports is topped only by coffee, which is not even grown in the United States, and by nonferrous ores and metals which are in definite scarcity here.

U. S. INDUSTRY STAND

(Continued from preceding page)

—the lowest tariff structure which ever existed. As a result of reciprocal trade, paper tariffs have been cut to the point where they averaged in 1952 a little over 8%—a reduction in tariff structure for the industry of about 65%! They are down to about one-third of what they were under the 1913 act.

At the present time the average duty on paper is lower than on any other dutiable commodity. The average rate of duty on all commodities in 1952 was 12.8% as compared with the 8% average on paper. It should be understood that these average rates for paper are on dutiable commodities, and thus exclude newsprint. If rates were taken for all commodities the average is 5.3%, whereas the average rate on all papers (including newsprint) is 1/3 of 1%.

For the first 10 months of 1952 paper, pulp and pulpwood imports into the U.S. amounted to $750,000,000, as compared with exports of these commodities of $126,400,000. This results in a net trade balance to foreign countries as far as this industry is concerned of $623,600,000. The paper industry contends this is a pretty good contribution to international trade.

The paper industry is roughly 1¼% of the gross national product. During the first 10 months of 1952 the paper industry supplied 1.1% of total non-military exports and as a market it absorbed 8½% of all imports—which is considerably more than its share. If exports and imports of the paper industry had been in balance, the dollar gap between non-military imports and exports would have been $2,844,000,000. Actually, because of the paper industry's contribution, it was 22% lower than that.

The rate of duty into Canada is at least three times as high as the U.S. tariffs. When there have been negotiated duties with foreign countries, reductions have been relatively small, and have frequently been offset by embargoes and quotas.

With this experience, the industry position on reciprocal trade is that there is no justification for reduction of duties on paper until other countries place their paper duties on the same level as the U.S. —and perhaps no justification even then. Because it is to the national interest to keep a strong industry here, it contends.

The object of a trade—not aid program is said to be to assist free world countries to rehabilitate themselves through trade. This industry's leaders contend that reduction of paper tariffs have no prospect of helping measurably any of the countries needing assistance, and would definitely prove of benefit to a country not needing assistance—Canada. The long range program of Canada (see story that follows) is to export less raw materials and more manufactured materials—a program for which American leaders express understanding but say that the U.S. should not be expected to cooperate to its detriment, nor the U.S. industry to foster if it means its own destruction.

The pulp and paper industry is assured of some strong support for its position in Congress. But the administration appears to be definitely committed to the principles of trade—not aid, that there may not be too much sympathy in those quarters. PULP & PAPER could detect none. So this industry may have to get its story across to Congressional leaders to avoid unfavorable treatment.

Ted Tinker to Address Michigan Forestry Meeting

E. W. (Ted) Tinker, executive secretary of the American Paper & Pulp Association and a 1913 graduate in forestry from Michigan State College, will be main banquet speaker on May 22 at East Lansing, Mich., when M.S.C. celebrates the 50th anniversary of its forestry department. Mr. Tinker formerly directed state-private cooperative work for U.S.F.S.

A two-day program starts that morning and continues through the next day with a tour of Kellogg Forest at Battle Creek by bus and car. Talks by Dr. Paul A. Herbert, Michigan Department of Conservation director, and Dean George A. Garratt of Yale's forestry school, and M.S.C. alumni, are programmed.

For pulp and paper representatives, Dr. A. J. Penshin and staff will explain the development of aspens at Dunbar Forest Experiment Station near Sault Ste. Marie.

IN LAKE STATES NEWS

MACE HARRIS (left), who has become Manager of all Manufacturing at The Northwest Paper Co., Cloquet and Brainerd, Minn., mills, succeeding Irving McNair, now retired in Arizona, as we reported in April. Mr. Harris has had long experience at Cloquet, here he was Mgr. of Pulp Mfg. for years. R. W. REED (right), named Converting Sales Manager for Rhinelander Paper Co., Rhinelander, Wis., where he has previously been Tech. Director and Research Director.

THE ROAD AHEAD FOR U.S.A.

"OF PRIME CONCERN NOW IS BETTER FOREMANSHIP"

By Thomas B. McCabe

President of Scott Paper Co.

THE YEARS AHEAD will offer many severe challenges, but I personally am satisfied that the pioneering spirit of adventure and success is strong in our hearts. It is that spirit which built our great nation and I believe that it can and will meet and surmount any obstacle which may be placed in the way of progress.

America, in the past, has brought about a whole series of revolutionary changes in methods of production. It has taken the incentives of the competitive economy to bring forth these innovations. The development of new methods has required more and more capital per worker, but advances in the ability of business management have promoted the effective use of modern equipment and machines, and the serving of an ever-growing market.

The great rise in output is largely attributable to the vast amount of capital invested in more efficient equipment, and the steady improvement in the working conditions, training and experience of our labor force. Production per man hour has been raised considerably through the use of such equipment, by the shorter hours and better working conditions which serve to reduce fatigue, and through improved leadership and greater incentives.

In the future any large rise in real income to the shareholders and to the workers and further improvements in values to our customers can come only from increasing the effectiveness of all phases of our operations and the output per man-hour of every one of us.

Better Foremen Are Needed

In addition to these basic factors there is another equally important one—more interested workers. We have succeeded so far in making steady improvement in these many important ways of keeping output rising. Of primary concern right now is better foremanship and better dissemination of information generally to our people. After all, it is our workers who are both the builders and beneficiaries of the competitive enterprise system.

We are entering a period of temperate political climate in which industry can effectively show the nation how productive of goods and services we can be, how concerned we actually are with human problems.

Industry doesn't want and doesn't need special privileges. It wants and needs only a government with eyes open to the new frontiers that will benefit all mankind. Industry wants and needs a government that recognizes the powers, both kinetic and potential, of our great industrial economy, and a government that strives constantly to create a move favorable climate in which all sorts of enterprises will spring up and flourish.

Now, under new leadership, business can expect to eat its meals at the main table with labor, agriculture, government and the other segments of our economy.

Must Watch Table Manners

With all my heart I say and mean that American business and industry must watch their table manners. We must guard against giving any impression of wanting to grab too big a piece of the pie, and we must work arduously to show our countrymen that the free enterprise system is the one real means to gain personal liberty and decent living, that business and industry are not the fierce monsters some misguided people would have the public believe.

It is up to business to help make policies

A Leader Who Has Made Industry History

THIS ARTICLE is a major portion of Mr. McCabe's recent message to stockholders of the Scott Paper Co. But we present it here as a message to the entire pulp and paper industry. In fact, it is a message for all industry.

Thomas Bayard McCabe was born in Whaleyville, Md., in 1893. He started with Scott in 1916 as an office assistant at $10 a week. Then he worked in the cabinet room and his pay was raised to $15. He continued an interest in banking, helping his invalid father who was Pennsylvania's State Commissioner of Banking. He started selling for Scott and within a year he tied the top salesman. After time out for army service in World War I, from private to captain, he rose to Scott sales manager by 1920.

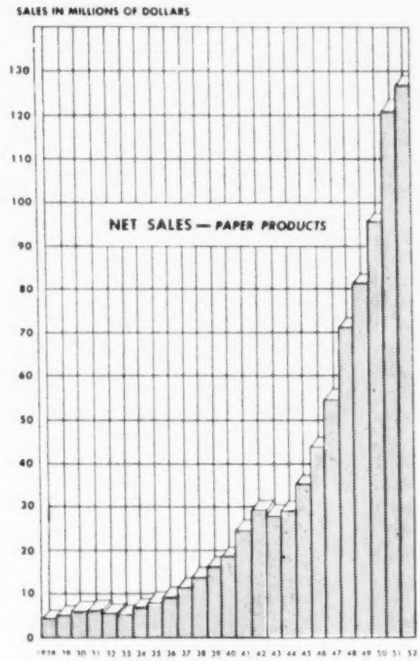
Mr. McCabe has been president of Scott for 26 years. It is well known that he, individually, owns a major portion of common shares in the company. Not so well known is the fact that he served as president and director in 1952 without remuneration.

He is widely recognized as having organized one of the outstanding sales forces in American industry, with a remarkable record for astute market and product research, exhaustive consumer surveys and technical testing. He has continued as the working, active president of his company even while carrying on other activities although he did take a short leave during wartime.

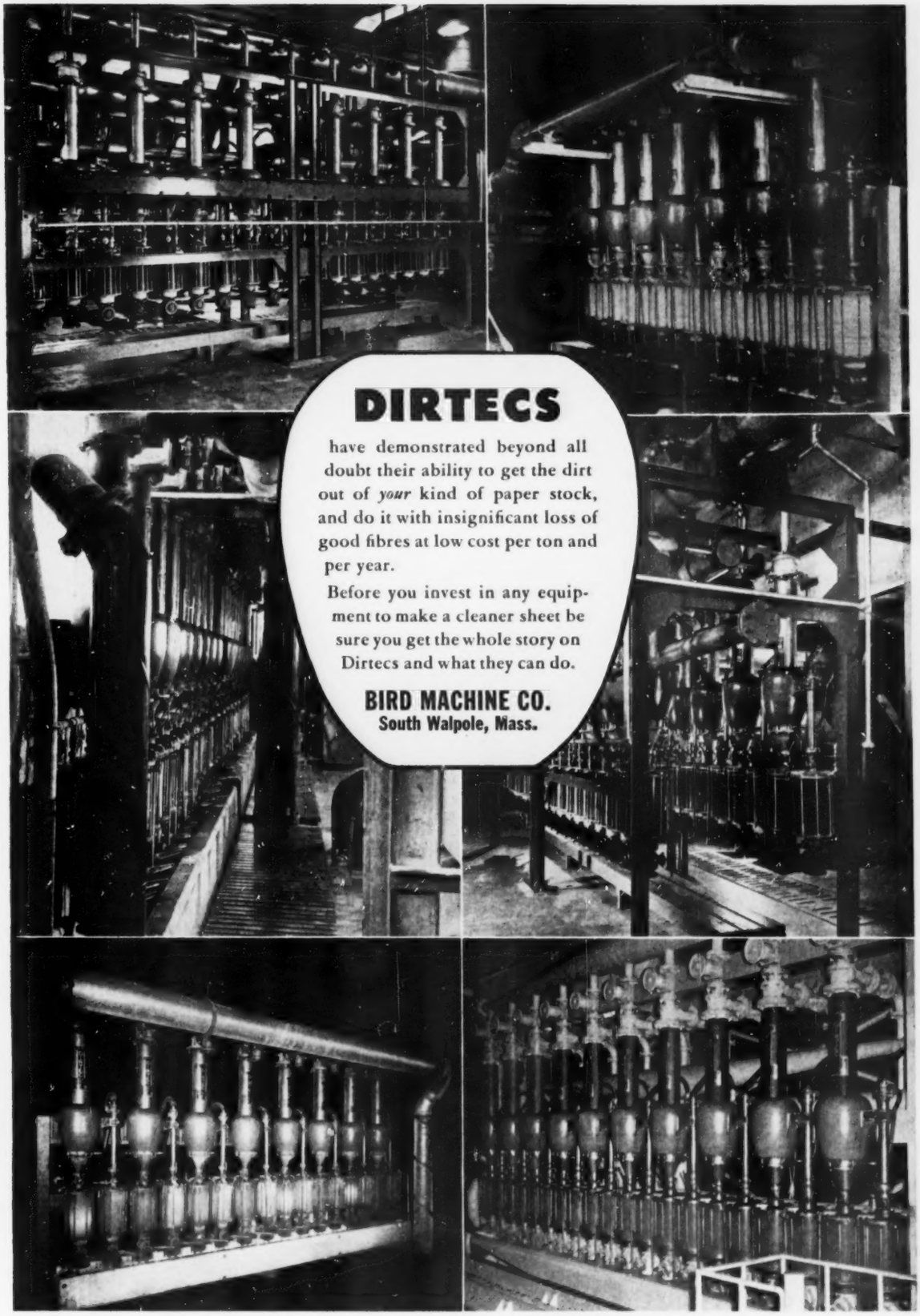
He was chairman of Federal Reserve System where he effected inflation curbs. He was chairman of the business advisory council for the Department of Commerce. He was special assistant to the Secretary of State in 1945 and acting deputy lend-lease administrator. He circled the world many times as post-war Army-Navy liquidation commissioner. He is a director of General Electric.

When he joined Scott Paper Co., sales were a little over $1,000,000 a year. Sales last year were $146,902,536 and taxes on income alone were $15,075,000, leaving net income of $10,707,346. Net income per share was $3.44. The company has 13,812 common shareholders, 955 preferred, and 5,354 employes.

Perhaps the most far-reaching event in Scott's history was its merger in late 1951 with Soundview Pulp Co., owners of the largest sulfite pulp mill in the world (600 tons daily) at Everett, Wash., and timberlands and cutting rights in Washington and British Columbia expected to yield 3½ billion bd. ft. (7 million cords). Soundview and subsidiaries also owned 100,000 logged off areas to be developed for future growth.



THIS CHART TELLS SCOTT'S SALES STORY—1928 TO 1952

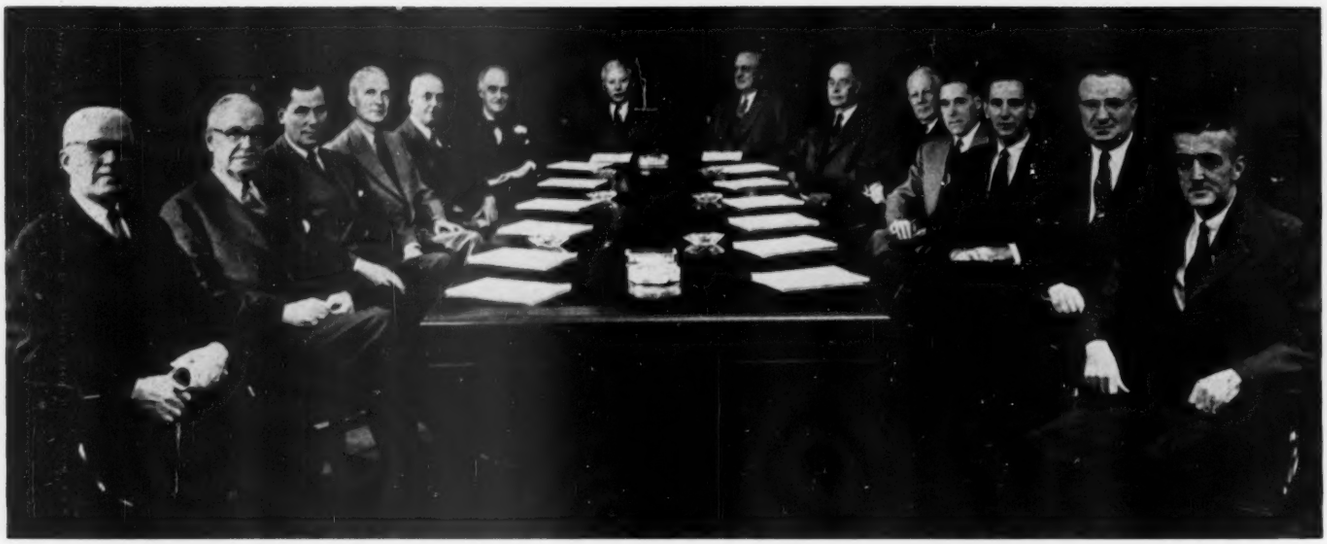


DIRTECS

have demonstrated beyond all doubt their ability to get the dirt out of *your* kind of paper stock, and do it with insignificant loss of good fibres at low cost per ton and per year.

Before you invest in any equipment to make a cleaner sheet be sure you get the whole story on Dirtecs and what they can do.

BIRD MACHINE CO.
South Walpole, Mass.



SCOTT PAPER CO. BOARD of DIRECTORS (l to r): J. Larcom Ober, Charles R. Van de Carr Jr., Thomas S. Gates Jr., Roswell H. Rausch, Walter A. Starr, Wm. Clarke Mason, Raymond C. Mateer, Thomas B. McCabe, U. M. Dickey, Stanley Resor, Francis W. Plowman, G. Willing Pepper, William M. Carney, William R. Scott 3rd.

which offer our people more and more opportunities—material, intellectual and spiritual. If we try to get special concessions for ourselves, and forget the rest of the public, we are in for real trouble and so is the whole world. Instead of that, we must recognize the tremendous opportunity we have to make a better world.

All of us, and particularly businessmen, must do everything in our power to strengthen our economy. It is the only proven way of life that offers the most to the individual in freedom and opportunity with full recognition of his personal rights. After all, it is individuals, in an atmosphere of equal rights and opportunities, who have made this country great.

We owe a tremendous debt to our forebears who made possible our economy, a debt which we can repay only by rising to even greater heights and making our country a living example for all to see.

This is the best answer to tyranny and oppression.

Other Highlights Of Mr. McCabe's Message

". . . as additional means of bringing its products before the consumer, the company embarked in 1952 on two television programs . . .

". . . during the year, the company used a larger portion of Soundview Division pulp, thus reducing the sale to outside customers . . .

". . . if early 1953 is indicative, the company should have another remarkable sales record . . . paper sales in 1952 increased 4% in dollars and physical units over 1951 . . .

". . . research and production skills produced radical changes in equipment and dramatic quality improvement . . . Scotties were treated to provide a facial tissue unbelievably strong when even soaking wet . . . a new product, Scotkins (paper napkins) are being actively sold in New England and distribution will be widened . . .

". . . new converting plant at Marinette, Wis., is under construction and should be completed this fall . . .

". . . construction of the West Coast Paper Mill is under way at Everett, Wash. The spring of 1954 should see the first paper machine and converting equipment producing several Scott products from pulp piped in slush form from the adjacent Soundview pulp mill. A paper mill on the West Coast is one of the long dreamed-of forward steps in the growth of Scott Paper Co. It will make possible efficient integration of production and distribution in that rapidly expanding market and permit greater diversification at other plants."

THESE MEN ADVANCE IN CROWN ZELLERBACH MANAGEMENT

PROMOTIONS AND NEW ASSIGNMENTS for Crown Z officials (l to r): FRANK N. YOUNGMAN, Portland, Ore., Vice Pres. and Director, who received additional responsibilities as General Representative in Pacific Northwest.

PETER T. SINCLAIR, promoted to Vice President in charge of Industrial Relations, San Francisco, and will actively direct labor relations, employe and personnel relations.

EDWARD P. STAMM, promoted to Vice Pres., will continue to direct logging and forestry from Portland, Ore. With company 27 years.

F. O. BOYLON, promoted to Assistant Resident Mgr. at the big Camas, Wash. Mill from Ocean Falls where he was Asst. Res. Mgr.

CLARENCE A. ENGHOUSE, promoted to Asst. Res. Mgr. at West Linn, Ore., where he had long career as Tech. Director, Asst. to Mill Mgr.

GLEN D. KING, promoted to Tech. Director at West Linn. He was Asst. to Paper Mill Supt., and in previous activities has specialized in product research and slime control studies.

RAY A. DUPUIS (right), promoted to Asst. Res. Mgr. at the Camas, Wash., Mill of Crown Z. Held same title at West Linn.

ED H. NUNN (lower right), promoted to Asst. to Res. Mgr. from Tech Director at West Linn, where he has had long career.

Two National Direct Dyes particularly suited for coloring

BLEACHED AND SEMI-BLEACHED KRAFT FIBERS

ERIE FAST ORANGE CGP CONC ON BLEACHED KRAFT PULP

These direct-dyeing National colors produce very uniform shades with good all-around fastness properties. They are reasonable in cost, easy to use and particularly adaptable to bleached and semi-bleached sulphate pulp. Combinations of National Erie Fast Orange WSP Conc and National Erie Fast Orange CGP, for instance, will produce almost any shade of orange.

Our Color Service Laboratories are always available to give you prompt help on any paper-color problem

ERIE FAST ORANGE WSP CONC ON BLEACHED KRAFT PULP

National Aniline Paper Dyes

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N.Y.
Boston Providence Philadelphia Chicago San Francisco
Portland, Ore. Greensboro Charlotte Richmond Atlanta
Columbus, Ga. New Orleans Chattanooga Toronto

Allied Chemical

OLIN MILL SITE NARROWS

MAY BUILD IN BASTROP AREA; BACKED BY MUCH TIMBER

FORESTERS FAMILIAR WITH THE TERRAIN and woods industry veterans of the Southeast are pointing their collective finger to a quadrangle formed by Monroe, La., Bastrop, La., and Huttig, Ark. (see map), as the most likely area for location of the new Olin Industries 80,000 tons a year dissolving woodpulp mill for cellophane and other uses. This is also one of six new high grade kraft pulp mills, just completed or being built, whose certificates of necessity were granted on a condition that they would be able to make nitrating pulp for military purposed by bleached or unbleached kraft pulp process.

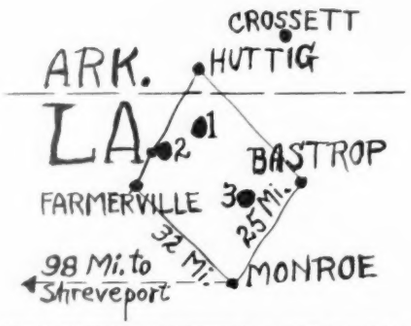
(In World War II, three Pacific Coast sulfite mills made virtually all the army requirements of nitrating wood cellulose and efforts to make it by kraft process had not been perfected).

Although Olin Industries executives had not announced their mill site as this issue went to press, it is understood they will not build a new sawmill and chips will come from its existing mills.

Touring of West Coast plants by an Olin executive means, instead, possible improvement of existing ones at Huttig, Ark., Mansfield, La., and Nacogdoches, Texas, according to PULP & PAPER'S Southern editor.

F. H. Wilson, formerly manager of Union Sawmill Co., Huttig, Ark., Frost Lumber Industries subsidiary acquired by Olin, and now a consultant, spent five weeks looking over a number of efficient West Coast mills.

Olin acquired Frost Lumber Industries, Inc., Shreveport, La., by stock exchange in Jan. 1952. At that time Frost operated five sawmills with aggregate production of 30M feet per hour, a flooring plant, and a treating plant. Production from these mills aggregated 80 million feet in 1951 of which 65 percent was pine. More important than lumber producing facilities was a very substantial forest land acreage, more than 200,000 acres in Louisiana and Arkansas and with good holdings in Texas. In all, 450,000 forest land acres were acquired.



LOCAL EXPERTS ARE GUESSING new Olin Dissolving Kraft Pulp Mill will be in quadrangle shown on map. Olin owns a sawmill at Huttig. (1) This site, on Missouri Pacific lines is mentioned. (2) L'Outre, on Bayou L'Outre, is another possibility. (3) A member of Arkansas Tax Revision Committee says this site—Sterlington—once considered by I. P., will be chosen by Olin. Shreveport is Olin's Southern headquarters. Pulp and paper mills are now in existence at Crossett (Crossett Paper Mills); Bastrop (two I. P. mills) and just west of Monroe (Brown Paper Mills).

Robert H. Evans, formerly an executive assistant to Pres. John M. Olin, was named general manager of the Forest Products Division at Shreveport, as part of the Southern operations under John W. Hanes, vice president, who directs the Ecusta Paper and Olin Cellophane Divisions, both at Pisgah Forest, N.C.

F. H. Wilson, manager of the Frost subsidiary Union Sawmill Co., Huttig, Ark., was elevated to production manager, and subsequently retired with W. H. Brown taking his place.

James D. Rhodes, formerly maintenance superintendent of the Riegel-Carolina Corp., pulp mill at Acme, N. C., was named division engineer for the Olin's Forest Products Div., with headquarters at Shreveport, La. His responsibility includes engineering and maintenance of operations. He was formerly with Ecusta and also Fernstrom Mills in California.

The newly acquired Olin forest acreage in three states will be administered according to latest modern management practices. Travis McClendon is forest manager. The Huttig forest acreage includes 151,506 acres certified as "Tree Farm."

The Nacogdoches, Texas, forest stand has been placed at around 75,000 acres. The Mansfield, La. forest includes 52,124 acres certified as "Tree Farm."

Charles Carpenter, formerly of Herty Laboratory, afterwards with Southland Paper Co., and New York & Pennsylvania Co., has been a consultant on the pulp project.

A member of the Arkansas Joint Tax Revision Committee stated the Olin mill would be built in Louisiana at Sterlington. Louisiana Power & Light Co. has a major generating plant there. Sterlington is on the Ouachita river 18 miles above Monroe, where Brown Paper Mill Co. is located, and 16 miles south and west of Bastrop, where International Paper Co., has two mills. Crossett Paper Mills, Crossett, Ark., is 30 miles north of Bastrop. The Ouachita river serves all these mills through tributaries, and also the International Paper Co.'s mill 80 miles northwest of Crossett at Camden, Ark.

Several locations are mentioned for the Olin mill. Felsenthal, an old sawmill site south of Huttig was ruled out by Arkansas tax laws. Inside Louisiana there is an old sawmill site on Missouri Pacific Lines, east of Marion, on the Ouachita directly; at site at L'Outre on Bayou L'Outre; and a location once examined by International Paper Co. leaders near Sterlington.

Both With New Southern Mills

JAMES D. RHODES (left), Division Engineer for Olin Industries' new Forest Products Div., Shreveport, La., planning new dissolving kraft process pulp mill. Mr. Rhodes was Maintenance Supt. at Riegel's new North Carolina mill, and before that with Ecusta in North Carolina and Fernstrom in California. CHARLES E. ROTH (right), newly appointed Mill Superintendent of the new Jesup Division, Jesup, Georgia, being built in Bayonier, Inc. He, too, had experience of new development at Riegel's new Carolina mill. He was with Mead Corp. for 16 years, nine years at Kingsport, Tenn., as Pulp Supt. His father and uncle, twins, Ernest and Eugene Roth, are retired Dayton, O., papermakers.

TIME-LIFE INTEREST IN EAST TEXAS

George Fletcher Is Evadale Mill Project Engineer

ON MINDS AND LIPS of many in the pulp and paper field is the query: "Why are the Time-Life people interested in the new $25,000,000 East Texas Pulp & Paper Co., where the announced products are to be bleached kraft market pulp and food container board?"

The basic answer to this question is that some years ago the Time-Life leadership began buying stock in Houston Oil Co. and now have a large stake in that enterprise. Houston Oil is one of the major timberlands owners of the South and provides an assured supply of pulpwood from 651,000 acres for the new mill. At least some of the pulpwood from similarly large holdings of Kirby Lumber Co., which is building a sawmill and chip plant at nearby Silsbee, will be available to the mill. Evadale is evidence of Time-Life's great expectations for the future of paper.

This industry recalls it wasn't so many years ago that Time-Life invested in purchase of several mills when paper supply was tight. But they included some old properties, and they were all disposed of. This time Time-Life, one of the biggest users of paper in the world, has its investment in what will be a new modern mill

Continued on page 37

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Puseyjones at Work

When the Sheet is on the Wire . . .

Fourdrinier Wet End of a Puseyjones Machine for light-weight kraft bag and wrapping papers in the South.

Top: Fourdrinier Wet End of a new Specialty Machine built by Puseyjones for a large mill in the Middle West.

Bottom: Rapi-Drape Wire Handling for new or existing machines is one of the many design improvements and labor-saving devices developed by Puseyjones.

Take a look at the Fourdrinier Wet End of a new high-speed Puseyjones Machine. See how the skills of many craftsmen are combined to form a top-quality sheet at high running speeds. When you buy a Puseyjones Machine, you get a machine-building experience of more than 100 years. Whatever your paper-making problem may be, the experience and facilities of this organization are yours to command. Write us today.

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with strong wood backing, and a versatile mill, regardless of what the products will be at first.

Time-Life is investing $8,000,000 in the East Texas company; Houston Oil, $3,250,000 and $13,750,000 is being borrowed from institutional investors. The mill is to be operating by 1955.

Engineering Organization

George Fletcher, of Howard Simons engineering firm, Vancouver, B. C., is project manager for the new East Texas Pulp & Paper Co. 250-ton bleached kraft pulp, paper and container board mill at Evadale, Texas. Construction of an office building is now being rushed at Evadale. Mr. Fletcher will spend about half his time there. He has been Mr. Simons' right hand man in building several new mills.

R. H. Simmonds, who has been with Mr. Simons several years, will be resident engineer at Evadale. Al Bruce will be field accountant at Evadale. Gerry MacDonald, Simons staffer, will be purchasing agent with temporary offices in Houston. Most purchasing is done through the Vancouver office. A Beloit Fourdrinier machine is ordered similar to the one at Weyerhaeuser's new Longview board mill (complete description on p. 64, Feb. 1953, PULP & PAPER).

Last month PULP & PAPER reported exclusively the new mill will have a substantial tonnage of high grade bleached kraft pulp to sell, as well as food container board. R. M. (Mike) Buckley, former vice president and sales manager for Soundview Pulp Co., a veteran in the pulp sales field, is executive vice president and general manager of the new company, with temporary offices in the Abstract & Title Bldg., Houston. A. G. (Buff) Natwick, longtime assistant manager at the Crown Z mill in Camas, will be resident manager at Evadale. Mr. Natwick has taken early retirement under the Crown Z retirement plan.

These are top men in the staff being organized by Richard A. McDonald, of Oakland, Calif., who is charged with overall planning and organization of the mill by his fellow-directors of Time-Life and Houston Oil.

Incidentally, one of Time-Life's book paper suppliers is the nearby Champion mill at East Texas. However one looks at this new venture, the Time-Life interest is unquestionably a long-range investment, built upon lessons that company learned in its previous investments in the pulp and paper field.

Equipment for Evadale

Some of the major equipment for the Evadale mill already has been ordered through the Simons organization in Vancouver.

Evaporators are to be supplied by Goslin-Birmingham. Digesters will be mild steel with circulating system provided by Esco, Ltd. (Electric Steel Foundry), and circulating pumps by Bingham Pump Co. Washers are understood to have been ordered from Improved Machinery Co., whose Canadian affiliate is Sherbrooke Machineries.

Babcock & Wilcox has received the order for a bark and gas-fired power boiler supplying 210,000 pounds steam per hour at 650 psig at 750 degrees F.

NORTHERN MILLS ADD 4th GRINDER

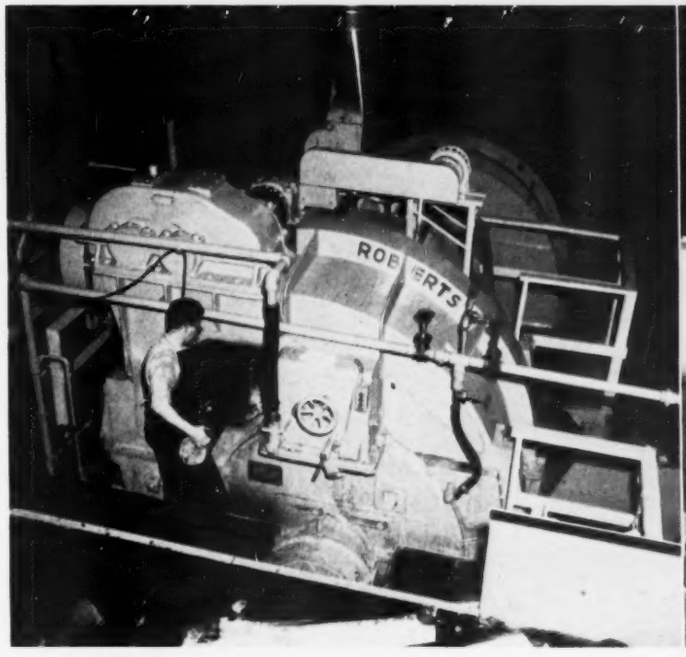
Northern Paper Mills, Green Bay, Wis., recently merged into Marathon Corp., has added a fourth grinder to its groundwood mill, adding 26 tons a day to capacity and bringing the total up to 90 tons daily. Prior to the installation, Northern was buying market groundwood but this is no longer necessary.

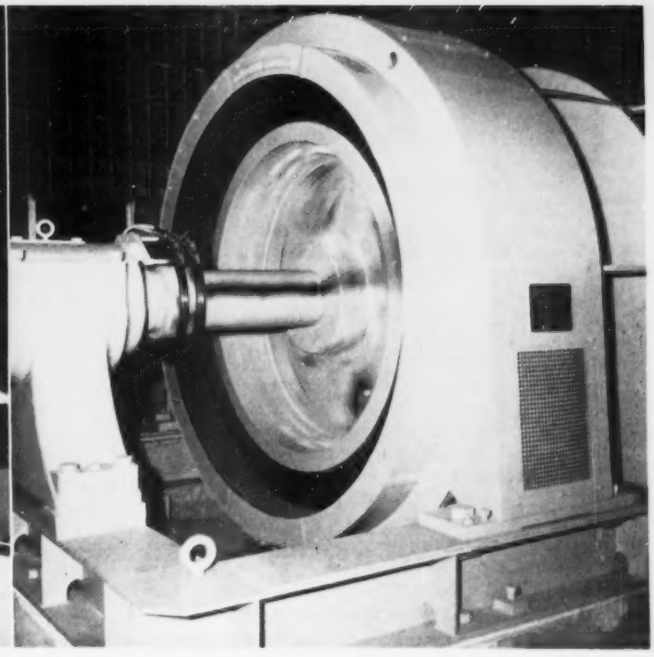
Other additions made this year, along with the grinder, are an additional round screen, new transfer pumps, groundwood decker, flat screen and storage tank agitator.

Appleton Machine Co., Appleton, Wis., supplied the Roberts Grinder. It is driven by a 2,500 h.p. Fairbanks-Morse synchronous motor. This is Northern's second Appleton grinder; the other two are Voights. It also makes 140 tons a day of sulfite for furnish for its toilet, towel and napkin products.

ROBERT SMITH (left), Pulp Mill Superintendent, Northern Paper Mills, is instructing RUSS KACZMARYNSKI regarding starting up of the new Roberts Grinder at Northern Paper Mills. This picture was taken in Groundwood Mill at start-up time.

(LEFT) NEW ROBERTS GRINDER now makes four grinders in line at Northern Paper Mills, and takes this mill out of market for groundwood needs. Appleton Machine supplied this grinder, the second Roberts-type for Northern. MELVIN BRUNNER is loading it. (RIGHT) BIG FAIRBANKS-MORSE 2,500 Ton Synchronous Motor is the drive for Northern's new grinder.





NEW WEYERHAEUSER KRAFT PULP MILL

SETTING THEIR SIGHTS on a smooth September start-up, Weyerhaeuser Timber Co.'s Pulp Division is pressing forward with construction of its 300-tons-a-day bleached kraft market pulp mill on the Snohomish River at Everett, Wash. This is the second Weyerhaeuser mill built especially for the kraft pulp market, the other being in Longview, Wash., and in both locations Weyerhaeuser has long made sulfite pulp for the market.

Howard W. Morgan, manager of the Pulp Division, with headquarters in Tacoma, Wash., Russell J. LeRoux, manager for all Pulp Division operations in Everett, and Gerald F. Alcorn, construction engineer for the Pulp Division, are overseeing the new project. The mill is actually diagonally across town from the sulfite mill of Weyerhaeuser's on the south end of Everett's harbor. The new mill is just across Pacific Highway from one of the biggest Weyerhaeuser sawmills on the Snohomish River, and the bulk of its raw material will be Douglas Fir leftovers from that sawmill. Other sawmills also will supply it.

L. H. Hoffman, Co., Portland, Ore., is general contractor.

The pulp drying machine for the new mill is a 156-inch Rice Barton Fourdrinier with Minton vacuum dryer. The wet end of the machine will be a duplicate of the Rice Barton machine in the Everett sulfite mill. The press section will duplicate the Longview kraft pulp mill's machine. There will be 48 dryers in the dryer section. The machine has a General Electric line shaft drive and steam turbine prime mover. New Engineering of Portland, Ore., is supplying air and ventilation systems and Midwest-Fulton, the drainage system.

Extensive Link-Belt conveying equipment is installed. The barking and chipping will be done at sawmills and newest of the hydraulic type barkers installed in the Weyerhaeuser mills are the Bellingham type built by Sumner Iron Works, Everett.

The six 10-ton mild steel kraft digesters are being carbon brick lined by Stebbins Engineering Corp. of Seattle. Electric Steel Foundry is supplying circulation systems.

The brown stock washing will be done on four Impco 11½ x 16 washers and there will be six Impco-Lindblad vibratory screens and flat screens for tailings. The Lindblad screens are the only preparation ahead of the machine. Fitchburg screen plates will be used in brown stock screening.

The bleach plant will have five continuous stages and one batch hypo stage. The continuous stages will have mostly conventional Impco equipment. The James Brinkley Co. of Seattle is supplying equipment for the batch stage. Stebbins is doing extensive Semtile work in the bleach plant. Sandy Hill is providing chlorination tower equipment.

Byron Jackson is supplying some white water and liquor pumps, including some of the largest. All stock pumps are by Bingham Pump Co., and black liquor pumps by Worthington. Ingersoll-Rand is supplying water pumps. Water facilities consist of a pumping station on the Snohomish River, five miles upriver from the mill site. In the vicinity of the mill is tidewater area and a filter plant by Northwest Flter Co. of Seattle is at the mill site.

Motors throughout the operations are General Electric. The G. E. motors include 500 hp. units in the recovery plant and 400 hp. motors for raw water. Westinghouse is supplying a 7500 kw. and 5,000 kw. turbo-generator.

The recovery and power system is a single unit for operation, including a 350-ton, 165,000 lbs. per hr. Babcock & Wilcox recovery unit with D. J. Murray cyclone evaporator, and a 150,000 lbs. per hour Babcock & Wilcox power boiler which is straight oil-fired. Hydraulic Supply Mfg. Co. of Seattle is supplying a 6-effect evaporator unit designed by James Rubush of Wenatchee, Wash. A Cottrell precipitator will be by Western Precipitation.

Pulp sheeting cutter and layboy and automatic baling conveyor and stacker are all coming from Lamb-Grays Harbor, Hoquiam, Wash. Baling presses are by Washington Iron Works. A 10-ft. Shartle-Dilts Hydrapulper will process broke for re-use. Pulp will be produced in both bales and rolls.

One of the requirements for nitrating cellulose, used by the military for all medium and large guns, is that it be delivered in rolls. Technique of making this specialty pulp by kraft process is being perfected.

Dorrco is supplying the recausticizing plant. It consists of a 35 x 24 Dorr clarifier; a 35 x 24 clarifier for mud washing; a 32 x 24 green liquor clarifier; a dregs washer, and an Oliver United mud filter. There is to be a 9 x 275 ft. Traylor lime kiln in connection. Salt cake and lime conveyors are from Holly Pneumatic Systems.

Instrumentation for the new mill is by Minneapolis-Honeywell, Foxboro, Hagen, Bailey and Fischer-Porter.

Chips from the sawmill across the road will be delivered by belt conveyor and others from distant sawmills by trucks and rail.

There will also be high density storage for brown stock and also bleached stock.

Interesting design is the common floor for digester operation, brown stock washing, and bleaching—all on one level.

Structural steel and Robertson corrugated asbestos siding are used in construction of main buildings.

Specially chemically treated and fabricated wood staving piping will carry waste liquor from the mill to a small deserted island in the middle of Snohomish River mouth for treatment and lagooning.

Interesting Facts About Weyerhaeuser Timber Co.

Weyerhaeuser Timber Co.'s annual report reveals its woodpulp sales in 1952 were more than one-third of its lumber sales and more than one-fifth of its total sales from all wood products.

Pulp sales: $54,577,391. Fiber and bark sales: $21,026,581. Lumber: $156,816,720. Plywood: $9,978,518. Other sales: $17,602,-029. Total: $260,001,239. Just ten years ago, its pulp sales were less than one-sixth of lumber, less than one-ninth of the total. In 1943 pulp sales were $10,262,221.

Weyerhaeuser is building its second market kraft pulp mill. It has two sulfite market sulfite pulp mills and two kraft paperboard mills. It makes 3.2% of all U.S. produced chemical pulp. It owns 7 acres per 1,000 acres of all U.S. private timberlands and reputedly its forests are among the most efficiently managed and operated in the world.

Buff Natwick Confers On East Texas Project

Albert G. "Buff" Natwick, newly named resident manager of the new East Texas Pulp & Paper Co., to be built at Evadale, Tex., was planning to travel in the east after returning to Texas early in April. In May he plans to attend the Spring Meeting of the industry superintendents and technical men at Gearhart, Ore. He was in Vancouver, B. C. in March, conferring with Howard Simons and his staff, consulting engineers for the project.

MEAD'S NEW RESEARCH LABORATORIES

A TRAVELING PULP & PAPER editor in Chillicothe, O., took two pictures and put them together to show this view of THE MEAD CORP.'s new $1,000,000 Mead Research Laboratories, which are nearing completion. This will be a central research center for the entire corporation. Vice Pres. R. H. Savage heads Research and Development and Corporation Tech. Service Depts. The main office and laboratory buildings shown are two stories high and measure 166 by 54 ft. An adjoining pilot plant structure encloses 15,630 sq. ft. of floor space and has a high roof. Activities of 100 men and women taxed the old quarters, and they were inadequate for new equipment.

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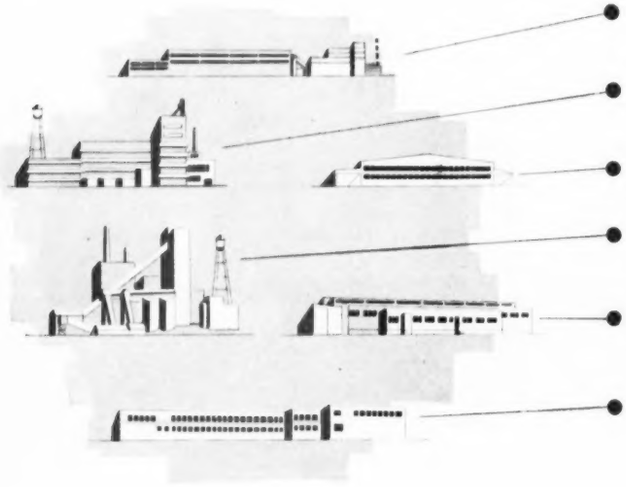
ST. REGIS REPORTS FOR 1952

THE YEAR 1952 saw the virtual completion of an 8-year expansion and improvement program. For this program St. Regis Paper Company expended $134,333,316.
At the end of the year, the following major projects were substantially completed and in operation:



- Completion of the new Jacksonville, Florida, kraft pulp, paper and board mill.
- Expansion of the Pensacola, Florida, kraft pulp, paper and board mill.
- Enlargement of the Pensacola, Florida, multiwall bag plant.
- Completion of Tacoma, Washington, pulp mill expansion.
- Completion of the new multiwall bag plant at Tacoma, Washington.
- Completion of the new multiwall bag plant at Dryden, Ontario.

ST. REGIS PAPER COMPANY paid dividends of $1.00 per share of common stock in 1952, as compared with 80¢ in 1951 and 70¢ in 1950. Copy of complete Annual Report available on request.

SUMMARY OF CONSOLIDATED INCOME	*For the years ended December 31, 1952 and 1951* 1952	1951
Net Sales	$182,712,239	$195,955,617
Cost of Sales and Expenses	158,165,799	159,845,270
Operating Income	24,546,440	36,110,347
Income Credits	2,561,466	3,757,159
Gross Income	27,107,906	39,867,506
Income Charges	2,867,531	1,126,663
Profit Before Taxes	24,240,375	38,740,843
Provision for Federal and Foreign Taxes	11,538,398	21,944,809
Net Income	12,701,977	16,796,034
Dividends Paid		
Preferred Stock	$ 693,308	$ 708,193
Common Stock	5,170,714	4,136,531
Net Income Per Share of Common Stock	2.32	3.11

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COAST MILLS AGAIN BETTER SAFETY MARK

LADIES 'STEAL' SHOW

ONE OF THEIR SUBJECTS—"HOW TO HANDLE WOMEN!"

LADIES' PANEL which created sensation at Labor-Management Safety Conference in Tacoma. They are shown with Moderator **OREN PARKER.** Left to right: **LAURA WADSWORTH,** Napkin Dept., Crown Z, Camas; **RUBY WOODS,** Paper Sorter at Rayonier's Hoquiam Mill; **SADIE KILBOURN,** Everett Pulp & Paper Div. of Simpson Logging, and **VERA MILLS,** Floor Lady in Tissue Dept., Pacific Coast Paper Mills.

TO SAY WOMEN stole the show at the last and the largest of the three annual Joint Labor-Management Safety Conferences on the Pacific Coast, the one held in Tacoma, Wash., in mid-March, would be putting it mildly.

A ladies' panel was the highlight of this meeting, attended by over 200 delegates of the AFL unions (Paper Workers and Pulp, Sulfite and Paper Mill Workers) and many mill managers and other management representatives of the Pacific Coast Association of Pulp and Paper Manufacturers. This was the Washington state meeting—Oregon and California had held similar smaller meetings earlier in the winter.

Oren Parker, PSPMW union, was moderator of this ladies' panel, composed of all union members—Vera Mills, Pacific Coast Paper Mills employe for 25 years and floor lady in tissue department, who told how to handle women of all types; Laura Wadsworth, napkin department, Crown Zellerbach, Camas, Wash.; Ruby Woods, paper sorter, from Rayonier's Grays Harbor Division; and Sadie Kilbourn, Simpson Logging Co.'s Everett paper mill. But more about this surprise feature of the meeting later.

The three Pacific Coast state conferences have now ended with these records:

All 35 mills again, for the 7th consecutive year of the annual conferences, reduced their total frequency rate, as did each state. (Injury frequency rate is total reportable injuries times one million, divided by total man-hours.)

It is obviously getting tougher to show a reduction each successive year, but the accompanying table shows how the seven Oregon mills, 19 Washington mills and nine California mills have done it.

The winners of trophies in each state for the lowest 5-year cumulative injury frequency rates in 1952:

	Rate
Calif. — Fibreboard Products Inc., South Gate	1.28
Wash. — Longview Fibre Co., Longview	3.28
Ore. — Crown Zellerbach Corp., West Linn	7.80

The Otto R. Hartwig award for the lowest yearly frequency rate, association-wide, went to Vernon Div., Los Angeles, of Fibreboard Products with 1.58.

The Governor's trophy winners in Washington and Oregon for lowest one year frequency record (for 1952) were Rayonier Inc.'s Hoquiam, Wash., division with 3.52 (a remarkable improvement over their 25.33 in 1945) and Crown Zellerbach's West Linn, Ore., mill with 3.91.

Top 15 Mills

Here's the top 15 mills on the Coast for 1952 (with man-hrs. exposure and rate): Fibreboard, Vernon—1,261,910 and 1.58; Fibreboard, South Gates—526,596 and 1.90; Longview Fibre, Los Angeles—421,-245 and 2.37; Rayonier, Hoquiam—1,698,-645 and 3.53; Rayonier, Port Angeles, Wash.—1,341,485 and 3.73; Crown Z., Port Angeles—1,287,362 and 3.88; Crown Z., West Linn—2,809,837 and 3.91; Crown Z., Camas, Wash.—5,567,208 and 4.31; Fibreboard (San Joaquin Div.), East Antioch, Calif.—1,115,126 and 4.48; Publishers' Paper, Oregon City—1,527,193 and 5.24; Crown Z., Port Townsend, Wash.— 1,563,-122 and 5.76; Longview Fibre, Longview—3,684,636 and 5.97; Scott Paper (Soundview Div.), Everett Wash.—1,134,553 and 6.17; St. Helens Pulp & Paper, St. Helens, Ore.—1,271,948 and 6.29, and Weyerhaeuser Pulp, Longview—1,534,391 and 6.52.

All 35 mills were listed, according to their record, in the association report. Low frequency records of 20.90, 25.52 and 28.57 were revealed, but those were among the smallest mills. It was noteworthy that the 15 leaders included several of the biggest mills on the Pacific Coast, or in the country for that matter, where low frequency records are usually considered more difficult to attain.

Longview Fibre at Longview holds the association record for longest number of injury-free hours, 2,875,539 hours, and Fibreboard at South Gate, the record for longest number of injury-free days, 1,043 days.

Getting back to the climatic Washington meeting of the series of three, this year's meeting was under direction of Jack F. Robertson, Camas safety supervisor and state chairman. The meeting co-chairmen were John Sherman, PSPMW vice president, and R. M. Gilmore, Rayonier's general safety supervisor. The Governor's trophy was received by George Holt, resident manager for the Hoquiam mill, from Fred Koch, Gov. A. B. Langlie's representative. Boyd Wickwire, personnel manager at Longview Fibre, received the 5-year award from Al Brown, of the PM union.

John Teevin, another PM representative and opening for labor, said:

"Accidents cost employers good money and for that reason the safety programs they support are worth the cost. To employes, accidents mean loss of income and suffering, even death. Labor is proud of this conference." He declared safety techniques were not keeping pace with manufacturing advances.

Howard W. Morgan, vice president of the PCAPPM and manager of Weyerhaeuser's Pulp Division, opening for the other side, extolled safety accomplishments achieved through cooperation as the best. An averted accident makes a three way saving, he said: "The dollars and cents cost of the averted accident can be diverted to production uses; the services of the needed worker are saved; his suffering and his family's discomfort are spared."

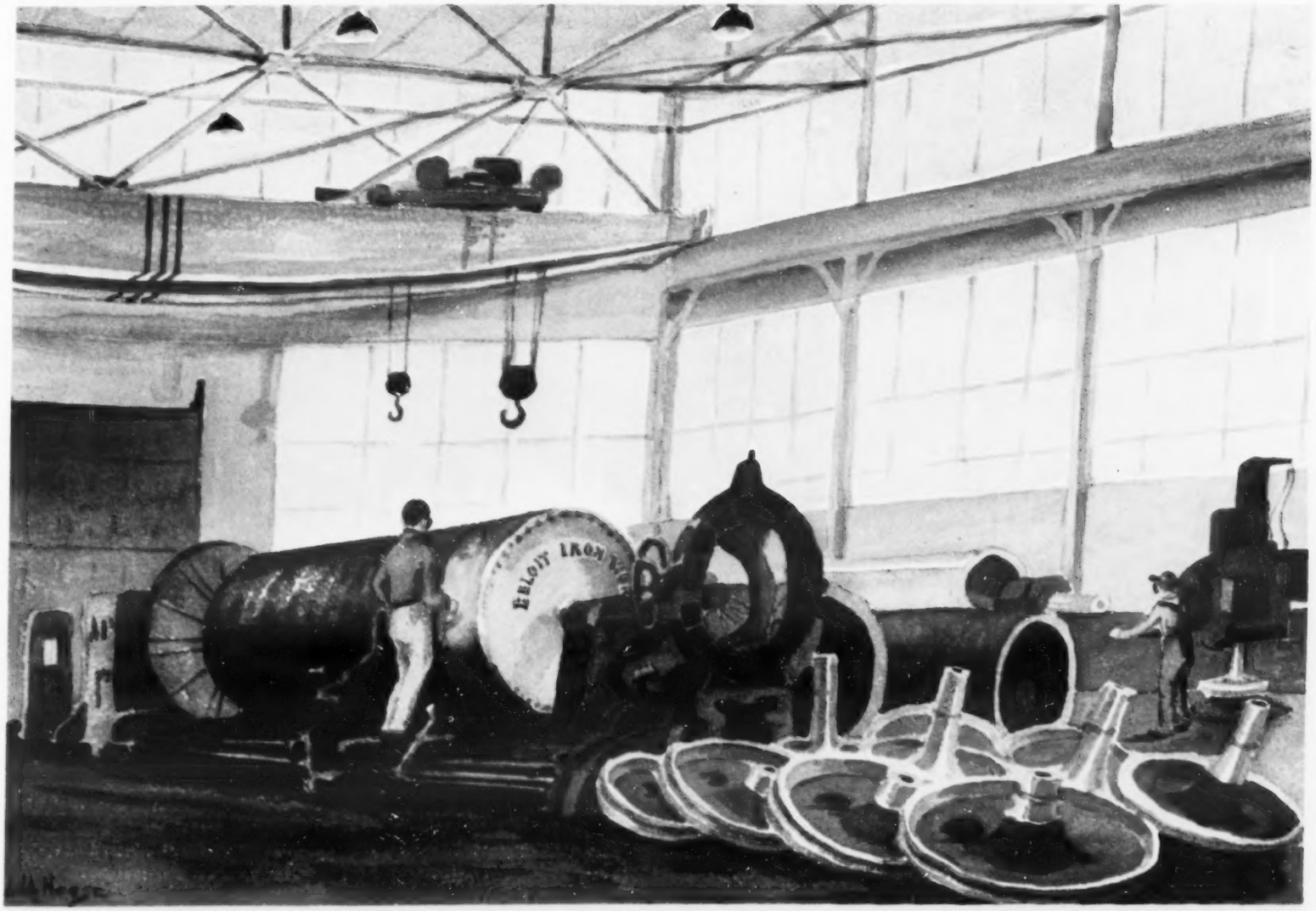
Mr. Morgan said his 25 years in the industry convince him that "human failure" is present in most accidents and can be reduced.

Otto R. Hartwig, safety consultant of Portland, Ore., and a former co-chairman and pioneer of the conferences, declared his belief human error was behind *all* ac-

FREQUENCY PROGRESS REPORT BY STATES

EIGHT YEAR PERIOD—1945 to 1952, Inclusive

1952 Rank No.	STATES	1945	1946	1947	1948	1949	1950	1951	1952
1.	Oregon Mills.....(7).....	62.01	47.06	37.33	18.22	11.61	8.27	8.38	6.83
2.	Washington Mills.....(19).....	35.56	31.69	25.44	14.35	12.31	8.64	8.93	7.29
3.	California Mills.....(9).....	29.16	26.33	16.96	13.39	11.27	9.19	9.50	8.56
	TOTAL ALL MILLS....(35).....	**39.19**	**33.45**	**25.94**	**14.85**	**11.97**	**8.70**	**8.96**	**7.49**



WATER COLOR PAINTING BY L. J. A. NEESE

BELOIT IRON WORKS · PAPER MACHINERY · BELOIT, WIS. U.S.A.

NEW DRYER SHOP at Beloit Iron Works is devoted exclusively to the building of paper-machine dryers—a specialized operation with each skilled machinist handling his own phase of the work. Beloit dryers are turned and bored to insure uniform drying of paper. Precision machinery, trained operators help make dependable dryers for high-speed, high-production paper machines.

cidents and said: "Machine failure may actually be an error in judgment—the wrong tool used, the wrong machine for the job, or some uncorrected fault in the machine."

The Ladies' Panel

If anyone expected the ladies' panel to speak meekly before the other 200 delegates—all men—they guessed wrong. The ladies' discussion was frank and intelligent. Mr. Parker started it off by saying their record for safety was better than the men's.

Some of the advantages women in industry have, it was pointed out, were a better color sense, better finger dexterity, a talent for "the art of criticism," ability to talk, intuitive sense, and more sensitiveness of people around them. A point also made was that women are about half as strong as men.

Here are some ideas advanced by the ladies:

Women would like to see labor and management cooperate in programs to educate workers and their families in the ways of safety. There is a home accident fatality every 90 minutes.

Industrial fatigue in women brought on by long hours of work, heat, cold, poor lighting, lack or excess of skill and various environmental conditions should be recognized by management and allowance made for it.

Women want the same respect from supervisors that they, the supervisors, expect. Pretty girls themselves are *not* hazards. It is the *men* who are the hazards because they pay attention to the girl instead of their jobs.

Miss Mills, from the Bellingham tissue mill, a forelady and a secretary of her local, listed five types of women in industry:

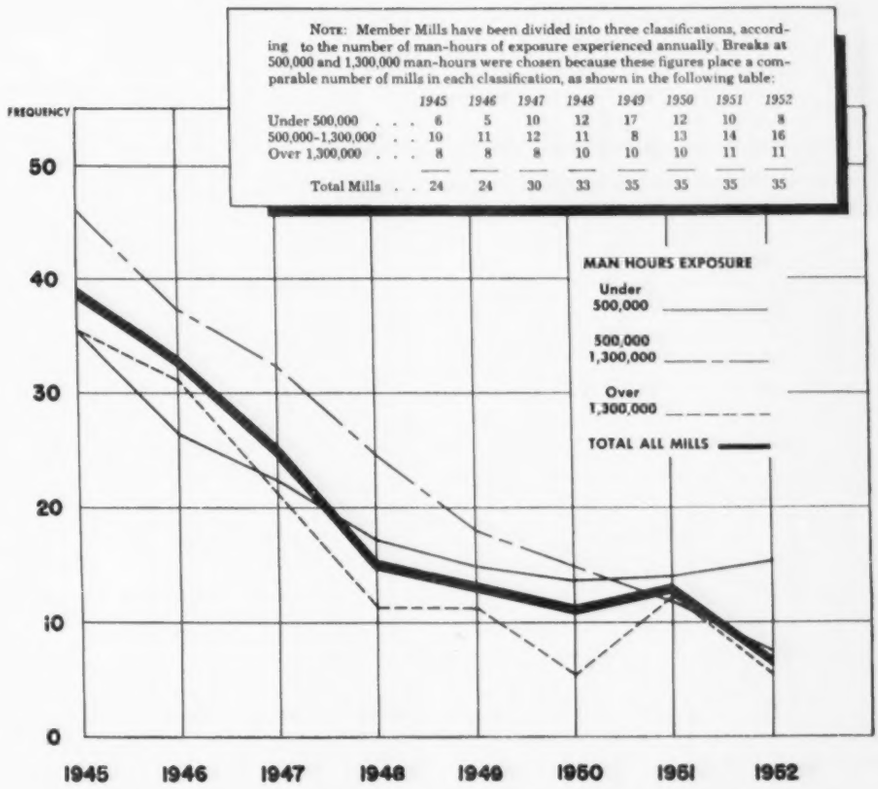
(1) The "career" woman—thinks she's just as good as men, likes to be encouraged by the supervisor; (2) the married woman—does better on a job where there is not too much responsibility, as she has too many problems of her own on her mind; (3) the "hears wedding bells" type—wants to be married, goes off on tangents and tends to be wild; (4) the "teen ager"—likes to play, is irresponsible and needs patience and firmness from supervisors; (5) the old maid—tries to mother all the young folk, a steady worker but tends to dominate—give her special work and she'll be all right.

A. H. Zeilinger, who directed steel mill safety for the last 25 years and is now safety superintendent for Colorado Fuel & Iron Corp., presented a dramatic appeal for labor and management to understand that each of them is not really a "group" but individuals, separate people each of whom likes (1) recognition, (2) to be heard, (3) to take part, and (4) to act for himself. "Safety," he said, "is the *right* way to do things."

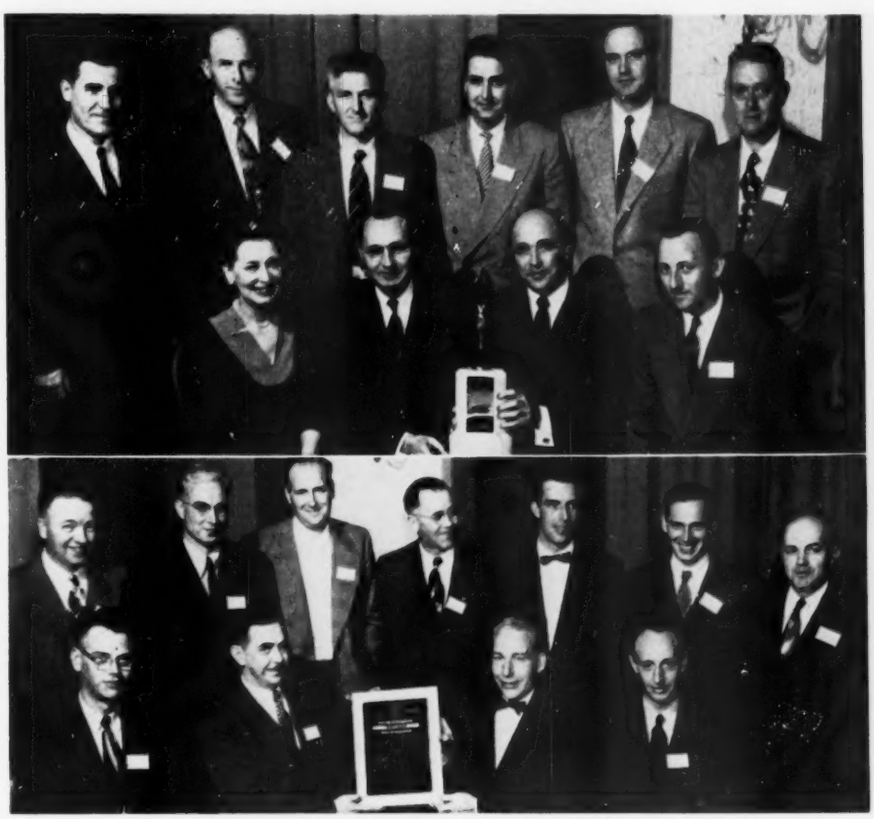
As in past years, another playlet was

Note: Member Mills have been divided into three classifications, according to the number of man-hours of exposure experienced annually. Breaks at 500,000 and 1,300,000 man-hours were chosen because these figures place a comparable number of mills in each classification, as shown in the following table:

	1945	1946	1947	1948	1949	1950	1951	1952
Under 500,000	6	5	10	12	17	12	10	8
500,000-1,300,000	10	11	12	11	8	13	14	16
Over 1,300,000	8	8	8	10	10	10	11	11
Total Mills	24	24	30	33	35	35	35	35



FREQUENCY PROGRESS ON PACIFIC COAST BY SIZE OF MILLS



TOP GROUP—RAYONIER'S DELEGATION from Hoquiam, Wash., Mill, winners of Governor's Trophy for best safety record in Washington state in 1952. Standing (l to r): ROBT. M. GILMORE, General Safety Supervisor of all Rayonier Mills; GEO. McKAY, Personnel Mgr. at Hoquiam; JOE NOVAK, VERN McCARVER, FRANK McCAULEY, WINSTON STEWART. Seated (l to r): RUBY WOODS, who starred on a women's panel; FRED KOCH, who presented the trophy for the Governor; GEORGE HOLT, Resident Mgr., and MERRILL CORUM.
LOWER GROUP—LONGVIEW FIBRE'S DELEGATION, winners of 5-Year trophy with a 3.28 record for that period. Standing (l to r): H. A. WOMACK, R. A. LYONS, J. F. WENAWESER, A. H. EATON, R. L. MULLEN, Safety Engineer; H. W. RUSSELL and R. E. STROMMER. Seated (l to r): H. R. AMBUEHL, AL E. BROWN, Union executive who presented it; BOYD K. WICKWIRE, Personnel Mgr., who received it, and H. ZIMMERMAN.

SAFETY EQUIPMENT DISPLAYED at big Tacoma, Wash. Labor-Management Safety Conference—Top left: **RICHARD H. RICE** (left) showing Safety & Supply Co. equipment to **ED WEBBERLY**, Beater Room Supt., Crown Z, Camas, and **BILL GORBUTT**, Personnel Mgr., Scott's Soundview Division. Top right: **R. S. WILLIAMSON** demonstrates the PNEOLATOR for Mine Safety Appliances Co. to **OSCAR KRETSCHMER**, Gen. Mgr., California Container Corp., Tacoma. The Pneolator intermittently inflates lungs to predetermined point, cuts pressure to permit natural exhalation, for automatic artificial respiration.

Middle left: Safety shoes are looked over by (from left) **HARLYN B. SCOBBA**, Converting Div., C. Z., Camas; **LOUIS SEEKINS**, union delegate from Camas, and **J. O. BURGESS**, Industrial Safety Shoe Co. Middle right: **WALTER KOEPP** (left) Haseltine & Co., distributors of Medical Supply Co. equipment, shows hard hat to **A. H. ZEILLINGER**, Supt. of Safety, Colorado Fuel & Iron, featured speaker at meeting.

Lower left: J. E. Haseltine & Co., Portland, Ore. representatives (l to r) **J. H. TADLOCK, WALTER KOEPP** and **PAUL CHATTERTON**. Lower right: Lehigh Safety Shoe Co., Allentown, Pa., showed this display of dress and work safety shoes.

staged to tell a safety story, this time by the Crown Zellerbach mill at Port Townsend. The plot was built around Sam, played by Frank Kilham, the assistant personnel and safety supervisor at the mill, who took the part of Sam, a worker who was "all fouled up," and Harry Porter, assistant safety engineer in his real-life role, who played Joe, a production foreman.

Sam was safety minded but never went through proper channels to report hazards. Joe was too busy getting out production for safety problems. They called in the Boss, played by William Beaton, technical assistant in the bag plant, who got everything squared away. Edgar Sherman, technical assistant in the pulp mill, played the role of Mud, a worker who kept overlooking his end of the safety work but promised to do better. Marvin Morris, union delegate, played a worker who had not been indoctrinated properly. Win Williams, also a union delegate, played part of a shop employe. Don Osborne, personnel supervisor, was commentator.

Charles Dodge, paint department foreman at Camas, chairmanned a department safety meeting as it might be conducted at any plant. Harold Springer, chief electrician, Rayonier, Port Angeles, discussed grounding of portable electric tools. Judge Matthew H. Hill was banquet speaker and Vic Gault, CZ general safety supervisor, was toastmaster.

RANDOM EXPOSURES AT TACOMA SAFETY CONFERENCE: Top (l to r)—**SID W. GRIMES**, Secretary, Pac. Coast Assn. of P & P Mfrs.; **OTTO R. HARTWIG**, one of "Fathers" of conferences, who came back as Consulting Safety Engineer to tell of accidents' hidden costs: **JOHN TEEVIN**, I. R. of Paper Makers, who opened for labor; **LEO ZIEL**, Res. Mgr., CZ Mill at Port Townsend, an award winner last year, and **HAROLD E. SPRINGER**, Chief Electrician, Rayonier Inc., Port Angeles, who talked on grounding electric tools. Lower row (l to r)—**HOWARD W. MORGAN**, Weyerhaeuser Pulp Div. Mgr. and V. P. of PCAPPM, who opened for management; **RUSSELL J. LeROUX**, Weyerhaeuser, Div. Mgr. at Everett; **PAT REITEN**, General Safety Supervisor of Simpson Logging Co.; **CHUCK NORDSTROM**, Personnel and Safety Director of Simpson's newest division, Everett Pulp & Paper Co.; **M. J. HODSON**, Chief Electrician, Scott's Soundview Pulp Div., and **NORMAN HEGLUND**, Woodroom Mgr. at Soundview Div.

Polyethylene and Saran Praised by F. W. Egan

Polyethylene lamination has "untold possibilities" in the future of the paper industry and Saran (a Dow product) will play an important part also in this field.

These forecasts were made by Frank W. Egan, of Bound Brook, N. J., who for seven years has been developing laminating equipment and other converting machinery at his own company there. Addressing about 100 members of the Chicago TAPPI at their March meeting in the Loop, he said the most important factors in laminating are:

(1) Web tension, which gives mechanical curl; (2) water retention, which gives wet curl, and (3) bond.

He said fastest laminations run from 400 fpm. for board to 1,000 fpm. for bag, and waxed paper from 200 to 400 fpm. He said he witnessed unusual high velocity laminating in Mulhouse, France. Polyethylene is easily applied, has many good properties. Its development and that of Saran, too, are challenges to the chemists, he said.

Builders of New Mill

Howard S. Wright Co., Inc., Seattle, builders of other mills and additions in the Far West, and American Pile Driving Co., Everett, Wash., are building the new Scott paper mill at Everett and will erect the Beloit high speed machine and other equipment.

PROFITABLE UTILIZATION OF FOREST PRODUCTS IS THE KEY TO A SUSTAINED GROWTH.

John W. BOLTON & Sons, Inc.

Lawrence, Massachusetts, U.S.A.

HOW TO REDUCE ACCIDENTS

ONE BASIC REQUIREMENT IS GOOD EMPLOYEE RELATIONS

Mill managers, supervisors and safety engineers are themselves to blame if they do not interest top management and officers in safety.

And fairness in policies and treatment of all concerned is a fundamental without which no safety program can succeed.

These were two salient points which were stressed by Cliff B. Boulet, director of personnel of the Wisconsin Public Service Corp., Green Bay, Wis., in a talk he made recently before the Twin City (Menasha-Neenah, Wis.) Industrial Safety Council. Over half of those attending were from paper mills.

Ed A. Page, of Kimberly-Clark Corp., Neenah, presided and is chairman of the Safety Council.

Mr. Boulet's own company, a public utilities company, has completed over 2½ million man-hours without an accident.

"You Can't Engineer Safety" was the title of his largely off-the-cuff discussion in which he stressed that 90 per cent of mill accidents are caused by what he called "mental failure—not man failure."

CLIFF B. BOULET (left), Green Bay, Wis., Personnel Director of Wisconsin Public Service Corp., and ED A. PAGE (right), Safety Director, Kimberly-Clark Corp., Neenah, Wis., headquarters. Mr. Page is Chairman of Industrial Safety Council which heard heard the talk by Mr. Boulet reported here.

Accident Causes

"Something happened just before the accident that affected the man's thinking so that all the safety engineering was for naught," and he cited these possible causes:

"Fatigue, which causes a distraction from the job; worry, such as worry about his home, his health, his financial condition or his job; fear, a fear of losing his job; resentment, such as resentment against the company, the bosses, his fellow workers or the labor union; anger; forgetfulness; and failure to understand orders.

"Is there anything we can do to eliminate those causes of failure?" he asked and answered emphatically: "yes."

"The worker must be made to feel that he is part of a team and must have a cooperative attitude, a receptive attitude or you can never get them thinking they want to stop accidents," he said.

"The first thing to be done to get that attitude is you must have absolute sincerity on the part of top management that they are interested in the man's problems and in safety. Maybe your top management gives the impression that they are only interested in making money.

"Don't stop with just the second vice president. Get the president of the company interested, not just to pay lip service to safety but to actually take part in safety by attending meetings or writing personal letters in case of accidents. You should keep him informed about safety.

"I blame the safety engineers and supervisors and plant managers if they don't get the president of the company interested.

Fair Practices

"The second thing to be done," said Mr. Boulet, "is to lay the groundwork of fair practices as far as all employes are concerned. The employe is an individual and not a member and should be treated as well as other employes.

"Treat people so all feel they are treated fairly. If it is done otherwise, you will have trouble. Every supervisor must understand that and treat all 100 per cent fair and uniform. Have a set of basic policies that are fair and no question about them. When that is done, then you can start selling safety.

"Employes should be able to communicate with the boss and not just the reverse," Mr. Boulet said. "That has been one of the big problems of modern management, to be able to get employes to talk. You must develop means whereby they can communicate and have a chance to air their ideas and complaints.

"When you get your employes to think about safety with every move they make, then you have done something."

In 20 years in all industries, Mr. Boulet said safety engineering has only shown improvement in results of less than one per cent per year, and he asked:

"Do you think your production engineer, sales department, technicians and others would have a job if they showed improvement of less than one per cent per year?"

Companies with lowest frequency rates have satisfactory relations between employes and management. Those with highest rates usually have bad relations.

Designed to Trim your Trimming Costs!

86" Model E Undercut Trimmer showing side loading table. Loading table and air for floating pile are optional equipment.
SMITH & WINCHESTER
MODEL E
UNDERCUT TRIMMER
with Side Loading Table

Designed to Cut Trimming Costs

The S & W Model E Undercut Trimmer meets the needs of the modern finishing department for high production, accuracy and safe operation. For years the Standard Undercut Trimmer and the Model E have been giving outstanding service in the leading plants of the country.

Now, we offer the Model E with side loading table and air for floating pile, for fast, straight line operation, ease of handling stock and increased efficiency. The Model E is built in 56", 66", 76" and 86" widths.

WRITE FOR BULLETIN!

The **SMITH & WINCHESTER** *Manufacturing Company*
SOUTH WINDHAM, CONN.

REX Z-METAL HELPS CHAINS

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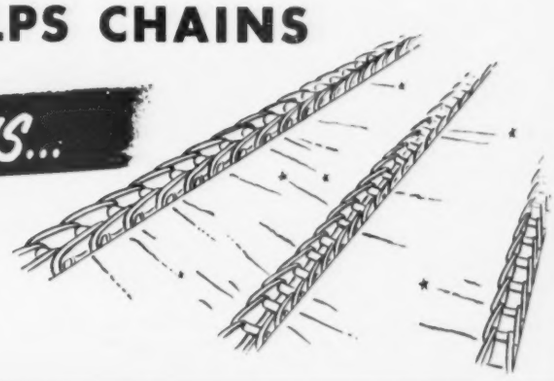
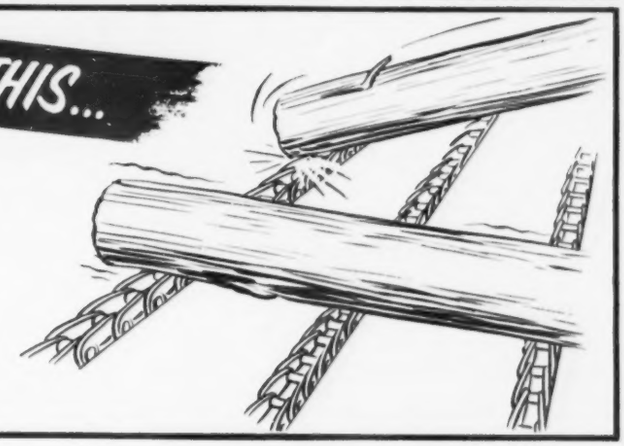


Because of Z-Metal's inherent *hardness*, Z-Metal Chains will stand up under very abrasive conditions . . . will take much more sliding wear than chains of ordinary malleable iron.

and MORE of THIS...



Because of Z-Metal's *ductility* it stands up well under heavy shock loads . . . can take much more punishment than ordinary malleable iron.

Extra strength, added toughness, increased resistance to wear and to corrosion and extraordinary ability to absorb shock loads —you can profit from these added values when you use Rex Chains cast of Z-Metal.

Z-Metal is carefully alloyed metal which combines surface hardness with a fine grained uniform structure. In short, *it combines both hardness and ductility,* qualities never before found together in the same metal. In addition, pins on Z-Metal Chain are heat-treated to assure strength and longer life.

So if you're looking for longer life from your cast chains...more value for your chain dollar, call your Rex Field Sales Engineer. He'll be happy to give you all the details on the Z-Metal story. Or if you prefer, write to Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wisconsin.

Average Comparative Mechanical Properties

	Ultimate Strength, Lbs. per Sq. In.	Yield Point, Lbs. per Sq. In.	Elongation in 2 Inches	Brinell Hardness	Fatigue Limit, Lbs. per Sq. In.
Rex Z-Metal	75,000	55,000	12%	170-190	37,500
Cast Steel Not Alloyed .20-.30 Carbon	70,000	40,000	25%	140-160	33,000
Cast Steel Not Alloyed .40-.50 Carbon	80,000	45,000	20%	160-180	37,500
Forged Steel SAE 1035	75,000	45,000	20%	150-170	37,500
Malleable Iron	53,000	35,000	18%	120-140	28,000
Gray Iron (a good grade)	30,000	30,000	None	160-180	.....

Z-Metal Makes These Great Chains Even Better

Rex Z-Metal H-Type Chain —for conveyor or drive service where loads and speeds are moderate.

Rex Z-Metal Pintle Chain for general conveyor and power transmission service where loads are light.

Rex Z-Metal Riveted Mill Conveyor Chain is extensively used for moving chips and refuse in shallow troughs.

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MARATHON MFG. MANAGERS MAKE MEETING IN MENASHA

MANUFACTURING MEN THEY ARE—from Marathon Corp.'s mills, plants and central offices, holding three days of panel discussions and open forums at Menasha, Wis. TOP (l to r): JACK L. STANIAK, Menasha Parafilm Plant Mgr.; JOHN W. FITZPATRICK, Menasha Waxed Paper Plant Mgr.; NORM H. FOLEY, Menominee, Mich., Paper Mill Mgr.; JOHN W. REIMER, Sunnyside, Wash., Converting Plant Mgr.; W. H. GRAEBNER, Chief Mill Mgr., and C. E. CASS, Service Operations Mgr.
Middle group shows ROY J. SUND, Exec. Vice Pres. (Mfg.), at right, showing newly designed Waxtex package. RAY N. HOLLANDS, Central Quality Control Mgr., is standing. Others (l to r): HAROLD C. SPERKA, Staff Assistant to Mr. Sund; BEN H. METTERNICH, Ashland, Wis., Paper Mill Mgr.; LAWRENCE D. FINK, Central Methods Mgr., and CHARLEY L. WAGNER, Rothschild, Wis., Pulp and Paper Mills Mgr.

BELOW—back row (l to r): GEO. F. HRUBECKY, Central Plant Engineering Mgr.; ROSS C. WILCOX, Central Process Engineering Mgr.; DOUG G. HYDE, Central Production Control Mgr. Front row (l to r): DON C. RAWSON, Oswego, N. Y., Paper Mill Mgr.; RALPH E. RISLEY, Menasha Carton Plant Mgr., and OSCAR O. EGGEBRECHT, Wausau, Wis., Converting Plant Mgr.

When eight mill and plant managers from Marathon Corp.'s U. S. operations met in Menasha, Wis., recently with central staff managers—all shown in pictures on this page—they were addressed by John Stevens, Jr., Marathon president; Emmett W. Below, controller; Carl R. Geisler, director of personnel; Palmer B. McConnell, stock products sales manager; Carl F. Franzen, stock products merchandising manager; Ted R. Neely, sales volume coordinator; Henry A. Shannon, assistant superintendent in charge of finishing at Wausau.

It is not often that pictures of so many managers in one company are obtained, though meetings like these are not unusual.

Muskegon Mill Buy Supplements Warren Lines

Stockholders of Central Paper Co., Muskegon, Mich., have unanimously approved the offer of S. D. Warren Co. for purchase of their firm. This action officially consummates plans defined by George Olmsted, Jr., president of Warren, to supplement the specialty lines of Warren with bleached and unbleached kraft products now manufactured by Central Paper, and to be ultimately followed by conversion of two Central Paper machines to manufacture of printing papers by 1955.

Central Paper stockholders will receive one share of Warren common for each two shares of Central.

Officials indicate Central's capacity will be expanded to 65,000 yearly tons from its present 38,400. Warren's capacity has been listed as 150,000 tons per year.

Reichhold Established New England Chemical Division

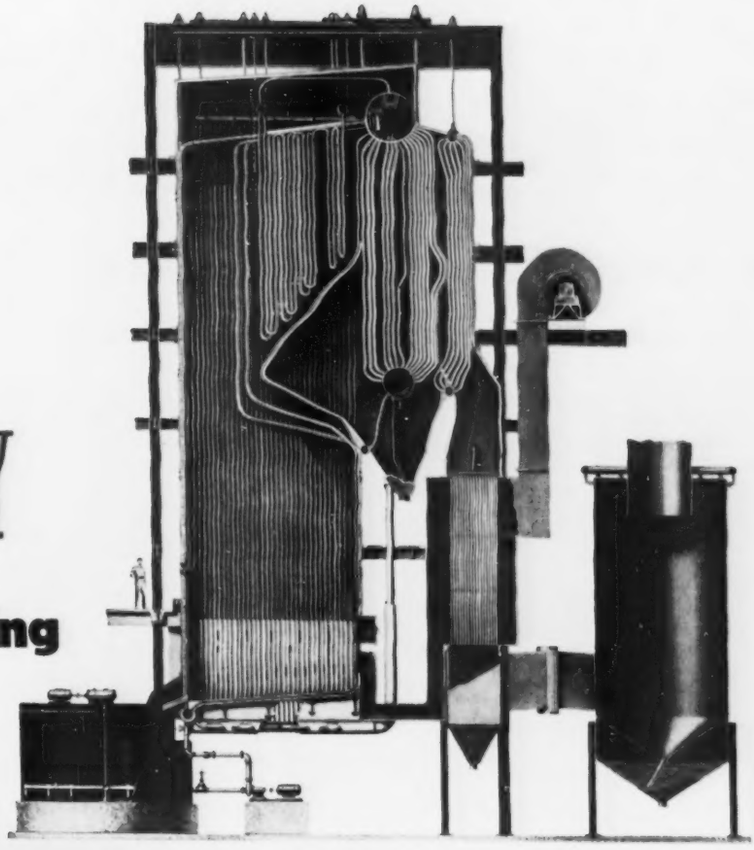
A division to produce synthetic resins and basic industrial chemicals has been established by Reichhold Chemicals, Inc. at Ballardvale, Mass. The new facilities are achieved through affiliation of Reichhold with Watson-Park Co. which had a production capacity of 25 million lbs. of formaldehyde annually. Howell F. Shepard, of Watson-Park, will direct the new division and is planning expansion to produce resins, dyestuffs, detergents and other products for New England.

M & O Rebuilds No. 3

M & O Paper Co.'s No. 3 Fourdrinier at International Falls, Minn., making groundwood and sulfite papers, is being extended 40 ft. and provided with new Reliance Electric & Eng. sectional electric drive with speed range up to 1200 fpm.

Beloit is supplying new press section, breaker stack, 10 more paper dryers (total to be 42), new center wind reel, smoothing presses, air guides, etc. A new Midwest-Fulton drainage with forced vapor circulation is being added.

RECOVERY
at
Roaring Spring



Typical B&W Black Liquor Recovery Unit

Airview of Roaring Spring, Pa., plant of The D. M. Bare Paper Company

The modernized Kraft mill now under construction at Roaring Spring, Penna., will put The D. M. Bare Paper Company back into pulp production, interrupted since 1951. Chemical and heat recovery will be provided by a modern 83-ton B&W Recovery Unit.

Choice of B&W equipment for this new mill further confirms B&W's ability to design and build efficient recovery boilers for large, medium, or small pulp mills. Foresighted engineering, unexcelled facilities, and many years of experience in meeting unusual requirements, form the base upon which the industry-wide reputation of B&W Recovery Units rests.

The Babcock & Wilcox Co., Boiler Division,
161 East 42nd St., New York 17, N. Y.

BABCOCK & WILCOX

P-773

Pulpwood section

NEW DEBARKERS AND SPEEDY CAR LOADING DEMONSTRATED

American Pulpwood Association Group Holds Meeting in Alabama

DEBARKING MACHINES to accommodate every size of Southern pine log and to fit any sawmill—including portables—will be available this year, leaving courageous enterprise as the principal factor required to tap mill waste as a chip source for sulfate pulp and paper mills.

Two of the South's larger lumber mills now produce chips from major installations—one in Alabama and one in Arkansas. Next to be effected is placement of moderately priced log debarkers at medium and small portable mills with delivery of convertible slabs and edgings to large mills, lumber concentration yards, or perhaps to a paper mill's strategically placed pulpwood concentration yard for chipping.

This preview of what's to come was provided at a Chapman, Ala., meeting March 11-12 of the Southwestern Technical Committee of the American Pulpwood Association. Also observed was a demonstration of how efficient pulpwood loaders operating in a switch track served "yard" cuts sharply into man labor hours in transfers from trucks to open rack railroad cars.

Top woodlands and pulpwood procurement men from Southern paper mills and also direct representatives of machinery and equipment manufacturers participated in the meeting.

TOM N. BUSCH (left) and R. B. SULLIVAN (right), Chairman and Vice Chairman, respectively, of the Southwestern Technical Commitee of APA. Mr. Busch is Supt. of Pulpwood Operations, International Paper Co.'s Southern Kraft Division and Mr. Sullivan is Coordinator of Wood Procurement for Champion in Texas.

Attention was first focused on three log debarkers demonstrated by Soderhamn Machine Mfg. Co., Talladega, Ala., details of which were discussed by Gus Jacobson, company president. The first of these, a 26-inch Type A pneumatic type unit, had been installed by W. T. Smith Lumber Co., and was viewed in actual production at Chapman. This machine is fed through horizontal feed and vertical guide rolls, the curved barking tools being forced against the logs by compressed air. The tools "ride" over irregularities and remove bark through scraping or rubbing rather than by cutting. Soderhamn also furnished the chipper and screen for the installation. Chips are shipped to St. Regis Paper Co.'s Kraft Center at Pensacola, Fla. (The other large lumber mill supplying chips is the Warren mill in Arkansas, supplying Crossett Paper Mills.)

Also on display was Soderhamn's "Carpenter" portable pulpwood debarker; an enlarged version to handle small logs and designed to sell for slightly under $4,000; and a third, intermediate size below the pneumatic type installation that will sell for $6,000. Both of the latter, as placed in production, will have pneumatic controls. The smaller unit will accept logs for debarking at one per minute. The larger "intermediate" size will accept 3 logs per minute (60 feet) in diameters ranging from 4 to 30 in. The log travels on conveyor rolls driven by gear and chain, and is rotated under a traveling barking head. The operator can go back to clean a rough spot, obtaining 100 percent bark-free logs. Although an installation may be made whereby the machine will kick off to a log deck it is preferable to have it move clear first. It is estimated that a complete installation will cost about $7,000. Existing conveyors may be used, if desired.

AT CHAPMAN MEETING OF APA COMMITEEE (l to r): W. A. TAYLOR, President, W. A. Taylor Machine Works, Louisville, Miss., whose yardster was demonstrated; W. B. DUBBERLY, Fort Deposit, Ala., pulpwood dealer for St. Regis; J. A. MURPHY, Atlanta rep. of J. I. Case Co.; GAINES W. HARRISON, and L. T. DOWDLE, both of Gaines W. Harrison & Sons, Columbia, S. C.

Furniture Plant Makes Chips

Profitable production of chips from unbarked slabs as part of an integrated operation was described by D. B. Frampton, Jr., of Baker Wood Preserving Co., operators of a utilization and treating plant at McArthur, Ohio. This hardwood plant produced furniture parts and other high grade items.

Since timber supplies were largely low quality, the plant sought an outlet for recovery of cost from waste wood. It found one, then more in the same field; developed customers in other directions. The "break even" project was converted to a profitable operation.

The company operates a double circular mill with #1 and #2 logs going to one side for cutting for quality; the #3 logs are sawn by the other side of the rig, with material going immediately to remanufacture to salvage anything of quality. The balance goes to a 100 h.p.-driven Carthage chipper. To augment the wood supply, the company takes 16 ft. top logs

THE HARRISON LOADER CRANE

THE PULPWOOD HANDLER THAT GOES EVERYWHERE YOUR TRUCKS GO–

Loader Crane in actual operation

Wherever your trucks can go, the Loader Crane can go to unload them—even in small yards. Use it for stockpiling, load with it from stockpiles or direct from trucks.

With a high lift to unload your trucks and a long reach to place loads on the far side of gondolas, the Loader Crane speeds up every phase of handling pulp wood on the storage yard.

A new design feature, the automatic counter weight, gives the Harrison Loader Crane unequalled stability. Moving back as load is lifted, the counter weight transmits load stresses to the rear axle, makes operation easier, reduces strains caused by "rocking". Counter weight is hydraulically operated, fully automatic. Large tires (1800 x 26) give flotation and add to the loader's stability.

The Loader Crane is mounted on a Case "LAI" industrial tractor—weight of loader and tractor including counter weight is 24,000 pounds.

For further information write or call—

HARRISON MANUFACTURING CO.

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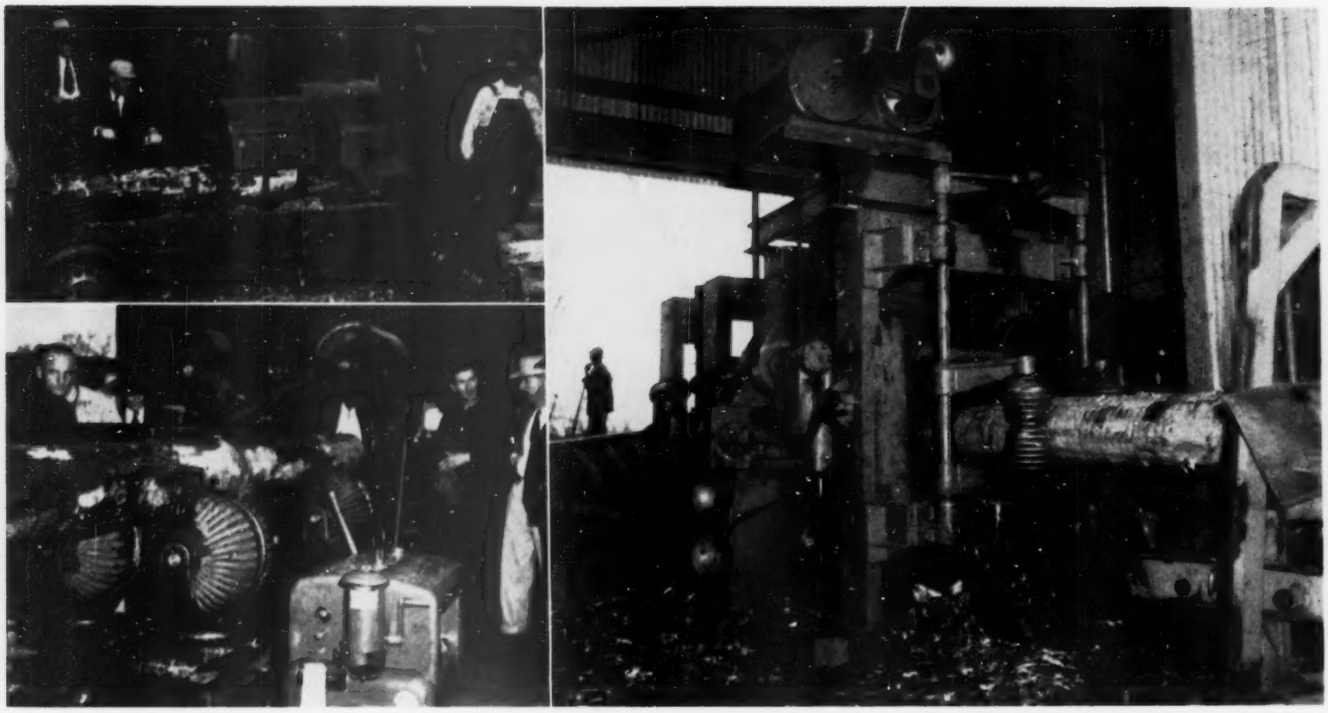

DEBARKERS DEMONSTRATED AT CHAPMAN, ALA.: TOP LEFT—SODERHAMN's "CARPENTER" PORTABLE DEBARKER, and LOWER LEFT—SODERHAMN'S INTERMEDIATE Size Debarker designed to serve medium size lumber mills. RIGHT VIEW—SODERHAMN's "ANDERSON" Debarker at W. T. Smith Lumber Co., Chapman.

instead of 12 ft.; buys slabs and edgings from portable mills in a range of 25 to 30 miles.

At first portable mills threw slabs and edgings on top the lumber being trucked in. Then it started truck loads. Unloading was direct to the chipper conveyor. Now the trucks are divided longitudinally by a U-shaped frame into two compartments. Flat slabs are laid for a bottom and side built up as loading progresses. Upon arrival at the mill, the truck is weighed in, its load removed by a fork lift, and the truck weighed out. Payment is on ton basis. The bundle is wired, set aside until needed, storage running 6 to 8 weeks. Two men break the bundles, feed slabs and edgings to the chipper.

Chips are shipped to as far as 500 miles. Mechanical pulp manufacturers and similar users are customers for these chips, 80 percent bark-free, sold by the ton f.o.b. shipping point. Hopper cars are used, chips pyramided at the mill levelling down by the time a railroad weighing station 25 miles distant is reached. Transit loss is 4 percent. Chips were sent to Bauer Bros., Springfield, Ohio, and their laboratory test found little bark getting through in separation tests. Fiber loss was slight. Hardwood showed up better than pine.

Modification of the Nelson Electric Mfg. Co., Tulsa, Okla., pole shaver into a successful log debarker was reported by J. O. Jones, who said a sixth unit is now being installed. Latest models are in operation by Weyerhaeuser interests. Performance records are held by Potlatch Forests, Inc., Lewiston, Idaho.

The debarker is served by a conveyor having a half-round steel trough with flat top chain without dogs, permitting the log to turn. It will accept logs up to 36 in. diameter, with the bulk of those debarked ranging from 14 to 24 in. An hour-glass roll feeds the log into the debarker. The machine has two cutterheads riding on top the log. The first cutterhead takes a bit from a knot on the first pass; takes the rest the next time it comes around. The second cutterhead effects a smooth finish. The cutterheads may be locked and the first and last 18 inches of the log thoroughly cleaned.

Using 49 h.p. electrical energy, the debarker cleans 50,000 ft. in an 8 hour day, costs $11,000 for a package job with the customer installing the conveyors. Asked about fiber loss, Mr. Jones cited closeness of standards in the pole industry where $^1/_{16}$ in. off would cost 90¢ from dropping a grade—enough to put a yard out of business.

High speed steel cutterhead knives are used, lasting 2 to 3 days on dry bark or 5 days on wet bark. Company accounts show an average of $700 annually for maintenance parts and knives per user. This debarker was not recommended by Mr. Jones for 5-foot wood or snarly Southern pulpwood.

Rapid Unloading By I.P.

Rapidity with which trucks may be unloaded and returned to the highways for another trip was demonstrated at the Georgiana, Ala., pulpwood concentration yard of International Paper Co. Here demonstrated were: W. A. Taylor Machine Works (Louisville, Miss.) "Pulpwood Yardster"; a Thew-Lorain wheel mounted crane, and a Hyster "Pulpwood Loader." Descriptions of the mechanical features were given by W. A. Taylor, Taylor Machine Works; Ed J. Finnin, Memphis representative of Hyster; and Gaines W. Harrison, Harrison Mfg. Co., Columbia, S.C. Mr. Harrison invited those present to see his "Harrison Loader Crane," mounted on a J. I. Case industrial tractor, at work at Branco Wood Products Co., at nearby Fort Deposit. Until recently Branco unloaded pulpwood by hand from trucks to railroad cars on a siding. Then a spur track was put into a 2½ acre yard, figuring to handle up to 150 cords per day. The use of the machine to lift the load from the truck to car, however, so speeded up the trucks and pleased their drivers, freed from manual labor, that receipts have run to 200 cords daily and expansion of yard size is contemplated.

Discussions

Discussion at the inside meeting revealed that the pulpwood yards, pioneered by I. P.'s Southern Kraft Division, is spreading rapidly with many dealers putting in similar arrangements.

Talking on national affairs, W. S. Bromley, executive secretary, said excessive federal land ownership deprives local tax-supported activities of financial support, and increased taxpayers' burdens by higher public payrolls and accompanying expense.

Earl Porter, woodlands general manager for I. P.'s Southern Kraft Division, urged close coordination between those in mills and forests, citing the forthcoming outside source of chips and changes in items produced by the plants. He stressed the need for alertness in meeting adversities of insects, disease and weather because of steadily increasing valuations of forests. Men working in the forests should be familiar with major insect enemies, be able to recognize signs of their invasion or of important diseases.

L. Eberhardt, Bauer Bros. Co., Springfield, Ohio, discussed their new refiner for separating fibers and bark. (See PULP-

KETCHIKAN PULP CO.

Build New $50,000,000 Mill With 300-Ton Daily Capacity

5 LORAINS CONSTRUCT MILL . . . WILL HANDLE PULP AND MAINTENANCE LATER

A big 2-yd. Lorain 820-J shovel is shown leveling site for the new Ketchikan Pulp Company mill.

On July 27, 1951, U. S. Forest Service accepted the Ketchikan Pulp Company's bid for approximately 8,000,000,000 feet of timber in Southeast Alaska. The contract guaranteed a minimum of 50 years' timber supply for a pulp mill of 500-ton daily capacity. The Ketchikan Pulp Co. is a jointly-financed venture of the American Viscose Corp., New York, and the Puget Sound Pulp and Timber Co. of Bellingham, Washington. Construction of a 300-ton mill, under the supervision of the Puget Sound Pulp and Timber Co. was started early in 1952. The general construction contract, amounting to almost $50,000,000, was awarded to Howard S. Wright & Co. of Seattle and Guy F. Atkinson Co. of San Francisco, known jointly as Ward Cove Builders.

The 55-acre mill site is at Ward's Cove, six miles north of Ketchikan, Alaska, and involves construction of a dam, plus a 4-mile fresh water pipe line. By 1965, the mill will be enlarged to the full 500-ton capacity.

The Ketchikan Pulp Company is the owner of 5 Lorains. At the mill site, a 2-yd. Lorain-820 digs tremendous quantities of rock. Another "820" excavates for a 4-mile pipe line to carry water to the mill from a new dam. 60 ft. cuts through rock were necessary along the pipe line right-of-way. Another Lorain, a Model TL25-K dragline, worked ahead of this "820" stripping muskeg and topsoil.

At still another location, a Lorain-80 crane was used to help construct a raft. The raft was then used to float the "80" about 60 miles downstream to a gravel deposit, where it will load gravel into barges for delivery to mill site.

Here, a Lorain 80-J Crane builds a raft that will float the Lorain about 60 miles downstream to a gravel deposit.

A 2-yd. Lorain-820 shovel is shown digging a rock cut on the right-of-way for a fresh water pipe line.

After the mill is constructed, the Lorain fleet will handle pulpwood and mill maintenance—evidence of Lorain versatility and money-making performance.

There is a Lorain of the correct capacity, proper mounting and suitable boom to fit any job. Select from the world's most complete line of shovel-crane equipment. You will find the correct answer for your needs in the Lorain line of product.

THEW LORAIN

THE THEW SHOVEL CO., LORAIN, OHIO

SPEEDY UNLOADING OF TRUCKS AND LOADING OF RR CARS at Chapman, Ala. meeting: TOP LEFT—J. I. CASE Mounted "HARRISON LOADER CRANE" at dealer loading point of Branco Wood Products, Fort Deposit, Ala., which has doubled receipts because hand unloading is no longer necessary. TOP RIGHT—THEW-LORAIN wheel mounted crane lifts load of pulpwood from contractor's truck, swings it to railroad open rack car at I.P.'s Georgiana concentration yard. LOWER LEFT—HYSTER "Pulpwood Loader" lifting from truck at I.P.'s Georgiana yard. Next move is onto pulpwood rack railroad car. LOWER RIGHT—W. A. TAYLOR MACHINE CO.'s "Pulpwood Yardster" carefully places its load on railroad car after lifting it from truck.

WOOD SECTION, Apr. 1953 issue of PULP & PAPER).

Industry should be concerned with major loss from non-use of sawmill waste and not wait for machinery perfection to save, say, the difference between 8 percent and 5 percent fiber loss, according to E. W. Fobes, U.S. Forest Products Laboratory. He cited West Coast practices in purchased chip utilization, mentioning one fiberboard plant using 80 percent purchased chips.

In small Southern portable mills where slabs and edgings are "manhandled" anyway, there's no reason for not pulling out clean usable material. He urged industry to start right out with immediate sources of bark-free material, for instance putting a man to pull slabs from conveyors running to the waste fire pit. This material could be trucked to a concentration point for chipping.

The hopper gravity feed is adapted to a sawmill with a raised mill deck, he reported, but a chipper accepting slabs from a horizontal conveyor has been produced.

CANADIAN MECHANIZATION INCREASES

J. B. MATTHEWS, Chief Forester, Abitibi Power & Paper Co., reelected Chairman of Canadian Woodlands Section.

Forest management, woods operation, woods labor and log transportation technique were among the subjects discussed at the 35th annual meeting of the woodlands section, Canadian Pulp & Paper Association at the Sheraton-Mount Royal Hotel in Montreal, March 25-27.

More than 750 woods managers, foresters, engineers and executives attended the sessions, and they represented some U.S. and European as well as Canadia companies.

Increased use of power saws and mechanical equipment in the woods of Eastern Canada was emphasized at the annual meeting of the Woodlands Section CPPA in Montreal.

Tom N. Busch, pulpwood supervisor for Southern Kraft Division, presided at the meeting, and was elected chairman. R. B. Sullivan, pulpwood coordinator, Champion Paper & Fiber Co., Pasadena, Texas, was elected vice-chairman.

H. H. Jefferson, APA safety officer, urged the need for safety work in the woods. He also said that chain saws will do the job if given proper maintenance.

J. B. Matthews, chief forester, Abitibi Power & Paper Co., was re-elected chairman, with J. H. Merrill, woods manager, Anglo-Canadian Pulp & Paper Association, vice-chairman. Councillors are R. S. Armitage, Price Bros. & Co.; R. R. Douglas, Alaska Pine & Cellulose; F. L. Flatt, Spruce Falls Power & Paper Co.; F. A. Harrison, Canadian International Paper Co.; P. V. LeMay, Marathon Paper Mills of Canada; R. G. MacFarlane, Fraser Companies; W. F. McColm, Donnacona Paper Co.; G. A. Potts, the Ontario and Minnesota Pulp & Paper Co.; H. A. Sewell, Ontario Paper Co.; L. L. Wetmore, St. Lawrence Corp.; C. R. Mills, Ontario Forest Industries; Edgar Porter, Quebec Forest Industries Association.

Hauling of pulpwood harvested in the James Bay watershed over the height of land to be dumped into the St. Maurice River watershed was described by E. R. Mooney, Canadian International Paper Co., who said that on completion of a five-year roadbuilding project wood is now being trucked 30 to 60 miles to the river and thence floated down to the company's big mill at Three Rivers. A forest community with electricity, sewerage system, running water, hospital, etc. has been established by CIP at Cooper Lake 285 miles from St. James Bay.

Modern logging techniques have made this operation possible, said Mr. Mooney.

R. T. Carter of Abitibi said the mechanical falling and bucking of pulpwood was the last segment of the industry's production operation to share in the mechanical progress made in other fields, but today there were thousands of power saws on Eastern Canadian woods operations. A. M. Stewart, Price Bros. & Co., told how moving pictures were used to train operators in use of power saws, but he said they had to be supplemented by practical work.

A vehicle specially designed under the auspices of the Woodlands Section to pick up over a cord of pulpwood where it has been cut and transport it over a strip of road to the main haul road was described by B. J. McColl, the section's mechanical engineer. A new conception of chassis design, incorporating a special steering mechanism, had to be developed by Bonnard Equipment Ltd., Lachine, Que., before the present prehauler was produced.

"Perhaps at no other time in the history of the industry have we been faced with a greater and more pressing need to reduce the cost of wood delivered to the mills," said E. L. Howie, chief forest engineer, Fraser Companies.

Reporting on the British Commonwealth Forestry Conference recently held in Ottawa, W. A. E. Pepler, manager of the section, stated that over half of the standing timber and almost 90 percent of the softwoods in the Commonwealth countries is in Canada, and 90 percent of the Commonwealth production of timber, roundwood and pulpwood is in Canada, exclusive of fuelwood, charcoal and distillation wood.

Forest fires, insects and disease annually consume as much wood in Canada as the nation's billion-dollar pulp and paper industry, reported T. S. Jones, manager of Thunder Bay Timber Operators Association, Port Arthur, Ont.

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SHIBLEY PRIZE WON BY WEST LINN ENTRY

Fiber Flocculation Study is Winning Paper—Another Reveals New Slimicide

D. E. BEASLEY, YOUNG CHEMIST with Crown Zellerbach Corp. at its coated book paper mill at West Linn, Ore., was adjudged 1953 winner of the Shibley award in a competition held in Longview, Wash., Mar. 13 with three other Pacific Coast competitors. This award and $50 is given annually by Pacific Coast TAPPI for the best paper in the contest for young mill technicians or operators.

"Fiber Flocculation" was the Beasley entry (complete paper follows on this page). The flocculation tester used was the type invented by John Wollwage of Kimberly-Clark, with some modifications made at West Linn.

A New Biocide

R. J. Herschler, Crown Zellerbach Corp. Central Research Dept., Camas, presented "Microbiological Control Studies Evaluation of a New Biocide." This new chemical appears to hold unusual possibilities as a pulp and paper slime control agent. This compound, 3,5-dimethyltetrahydro-1,3,5, 2H-thiadiazine-2-thione (subsequently referred to as 35-D), possesses many desirable properties—effective at low concentrations, low toxicity to warm blooded animals, easily handled, imparts neither odor, off-color or taste to pulp and paper; is prepared from low-cost readily available chemicals; exhibits low affinity for fiber, is non-foaming and not significantly corrosive to metals and alloys of the industry; and has a slow rate of kill.

Slime control studies, basically employing pulp substrata method (developed by G. D. King and described in Jan. 1949 PULP & PAPER), disclosed better than 90% reduction of total slime count when using 35-D at 20 p.p.m. and treatment time of 24 hours.

Recommendations for dispersing 35-D to pulp or paper machine are as follows: Initially at high treatment level of ½ to ¾ lb. per ton (air dry) pulp; feeding in by continuous addition, gradually reducing treatment level to minimum control level; feed toxicant into system at point allowing maximum contact time with stock.

S. Gordon Craig, associate chemical engineer of Simpson Logging Co. research laboratory, Shelton, Wash., presented "Measurement of Dimensional Stability of Insulation Board." He pointed out that experience has disclosed inadequacies in the present standard method (Federal Specifications & Commercial Standard LLL-F-32lb-9). A new method, as described, "though not perfect, has proven the merit of much greater accuracy and reproducibility." This calls for more precise sample cutting, measuring, and processing facilities, and specifies more extensive conditioning and measuring of samples.

Andrew A. Broz, Weyerhaeuser Timber Co. Pulp Division, Everett, Wash., who worked on the problem of determining location of water supply intake on a salt-fresh water river (the Snohomish) for the firm's new kraft pulp mill, disclosed techniques and problems involved.

SHIBLEY AWARD CONTESTANTS—1953 (l to r): D. E. BEASLEY, Crown Zellerbach, West Linn, Ore., the winner; S. GORDON CRAIG, Simpson Logging, Shelton, Wash.; R. J. HERSCHLER, Crown Z, Camas, Wash., and ANDREW A. BROZ, Weyerhaeuser, Everett, Wash.

Millsite samples at high tide showed chlorides ranging from 12,700 to 14,500 p.p.m., practically undiluted bay water. Samples taken 6 miles upstream showed 700 p.p.m. Although no chlorides were found at 12-mile point economic considerations demanded further investigation downstream to ascertain a location satisfying quality and economic requirements. This disclosed that the upper end of Ebey Slough, a lower channel to the bay, remains salt free except for slight amounts following high tides. The intake site selected as result of this survey, was located on the slough about 600 yards below its intake. At this point maximum upstream 170 p.p.m. chlorides content is diluted about 70%, well below recommended "maximum allowable tolerance of 70 p.p.m."

Myron Black, former Pacific Coast section chairman and mill manager of Inland Empire Paper Co., Spokane, Wash., was introduced at the dinner and Walter F. Holzer, assistant research director, Crown Z, gave a review of his European trip. Svarre Hazelquist, Weyerhaeuser, presided as section chairman, and Joe McCarthy, University of Washington faculty, was moderator for the awards contest. Judges were older members of the section.

Dr. Holzer said that while nearly every mill he visited in Scandinavia was improving or enlarging its plant, installed capacity had nearly reached its limit. Partly, this is because of slow timber growth, he said. Future development will be up-grading and higher utilization, he predicted.

Prize-Winning Shibley Paper—1953

FIBER FLOCCULATION

By D. E. Beasley, West Linn, Ore.

(This paper was presented with three diagrams showing effects of temp., alum and mannogalactan on flocculation of bleached sulfite and a photo of temp. changes, but these are explained in the paper.)

PRODUCTION OF QUALITY PAPER demands good sheet formation. The continual speed-up of paper machines, with shortening of drainage time, makes the attainment of good formation more and more difficult.

Good formation requires a well closed, homogeneous sheet which will exhibit a minimum of fiber clots. These clots, or floc as they are called, are masses of fibers which flocculate prior to formation of the sheet on the machine wire.

Some of the variables which affect flocculation are fluid viscosity, electrokinetic charge on the fibers, and consistency. Fiber-fiber collisions, dependent on one or more of these variables, always occur as an intermediate step in flocculation. Since it is impossible to eliminate all of the conditions which facilitate fiber-fiber collisions, it was decided to study the variables which might change the probability of collision, and those which tend to prevent separation of the fibers after collision.

Preliminary Considerations

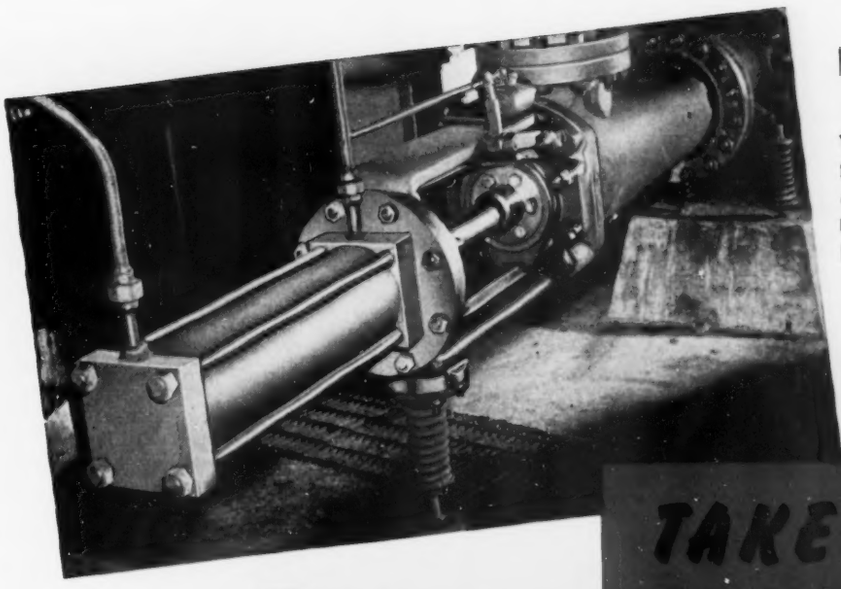
Before selecting a flocculation tester, the various types must be considered. From a preliminary point of view, either a static or dynamic type of flocculation measurement may be made on a pulp suspension.

Equipment for a static measurement of flocculation is simple in design and construction. It consists only of a glass tank in which fiber dispersion is obtained by turbulent agitation with suitable stirrers. After the pulp is dispersed, the agitators are stopped and the degree and rate of flocculation followed visually or photographically.

Success of such an apparatus depends on how well equivalent degrees of dispersion can reproducibly be obtained by the stirring action. In any turbulent fluid flow, suspended particles always move in an erratic manner. This motion affects the dispersion of the suspended fibers in an unpredictable way. Reproducibility of dispersion may be expected only if the fluid motion producing dispersion is itself reasonably controllable. Any factor affecting fiber settling, for example, density, has an appreciable influence on the result.

A dynamic method of measurement, which allows the fibers to be acted upon by a continuous but constant and controllable agitation, and which permits observation of flocculation under flow conditions is much more desirable. One type of dynamic tester, a continuous blue grass view plate such as is used in many groundwood mills, is easy to fabricate. It has a thin film, low-velocity type flow which we considered undesirable for this study. Another type of dynamic tester, and the one adopted for this work, is a type originated by Dr. John Wollwage[1] of Kimberly Clark Corp. This tester consists of a large glass tube mounted vertically. Pulp suspensions flow downward through it.

A consideration of Reynolds number indicates that for a 3 inch smooth walled tube a flow rate of 7.5 liters per minute is the maxi-



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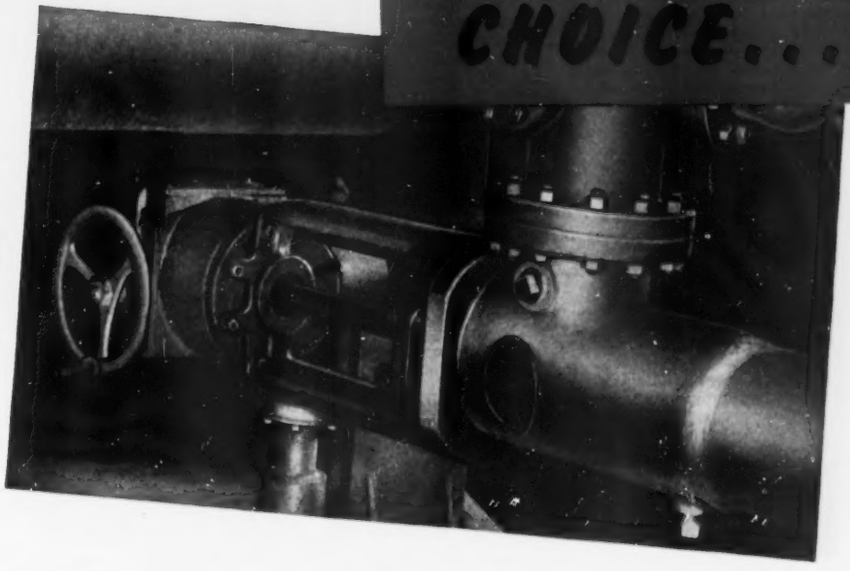

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DIGESTER BLOW VALVES

mum for streamline flow. In this experiment a rate well within the laminar flow range, 4.6 liters per minute, is used. At this lower rate, pulps with both high and low flocculation tendencies flocculate within the limits of the tube. In constructing the flocculation tester for this experiment several modifications of the original Wollwage equipment were made. These include:

1. A small headbox, capacity 18 liters, with an overflow maintaining a constant head.
2. A retention tank to hold an excess of the pulp suspension.
3. A long fluorescent light source mounted directly behind the tube to provide better illumination.
4. A means of introducing air into the suspension and a method for removing air.

The following variables were studied in the modified Wollwage tester:

(1) Consistency; (2) temperature; (3) hydrogen ion concentration; (4) refining action; (5) pulping method and species; (6) chemical additives—(a) alum, (b) surface active agents, (c) sodium hexametaphosphate, (d) colloidal agents; and (7) air in stock.

Experimental

The procedure adopted for making a flocculation run consisted of the following steps:

1. Filtered water, pH 6.7-6.8, was used to dilute 7.5 grams (B.D.) of fiber to 0.01% consistency. This consistency was determined by trial to give the best contrast for both viewing and photographing the fiber flocculation effects.
2. The agitators and the pump were started. The headbox was filled to the overflow. Before any measurements were made, the suspension was allowed to circulate through the apparatus for 30 minutes. This precaution was necessary because of fluctuations in flocculation which disappeared within 30 minutes of start-up.
3. Temperature of the system was adjusted during the preliminary run-in period. A heating element and a cooling coil were provided in the retention tank to control temperature.
4. Temperature and pH were taken.
5. Flow rate through the tube was adjusted to 4.6 liters per minute.
6. A photograph of the tube and a visual reading of the point at which flocculation first occurred were made.
7. Additives, if any, were introduced at this point. An interval of 10 minutes was allowed after each addition to insure thorough mixing prior to taking subsequent photographs and readings.

Photographic Record

The flocculation tester was constructed so that it could easily be photographed. Preliminary considerations had indicated that a photograph of the tube would:

1. Provide a permanent indisputable record.
2. Assist in evaluation of various runs.

In the photographs, two things concerning the floc are noticeable. First, there is a point in the tube at which flocculation takes place. Above this point there is no appreciable flocculation. Below, flocculation is general. Second, a change of character or size of the floc itself is seen when photographs of several runs are compared. From the standpoint of paper making, the size of floc formed may be of considerable importance. For the purpose of this study, however, only the distance down the tube at which flocculation first occurs is used as a criterion of flocculation.

Evaluation

A visual reading of the point at which a suspension flocculates is recorded in terms of distance below a fixed reference point. There is a straight line relationship between distance down the column and the time required for a given fiber to flow the same distance. It is believed that in many cases a time measurement is preferable. The results, therefore, are expressed to show any change in time of flow due to a change in conditions.

Results

1. *Consistency*—Increasing consistency proportionately increased the number of fiber-fiber collisions and thus increased the flocculation tendency. The range of consistency from 0.002 to 0.05 percent was investigated. Lower or higher consistencies were difficult to photograph because of lowered contrast in the tube.

2. *Temperature*—The effect of increasing temperature is a decrease in the viscosity of a fluid system. The result of a viscosity decrease is a decrease in the shearing force present in a laminar flow pattern. There is then less force tending to shear apart the clots of fiber. A decrease in temperature of 20 degrees F., from 87 to 67 degrees, increased the time to flocculation by 35 seconds.

3. *Hydrogen Ion Concentration* — Book groundwood and bleached sulfite were used in exploring the pH effect of flocculation. pH variation itself, within the range normally encountered in machine systems, had no effect on flocculation.

4. *Refining Action*—As the freeness of a stock is lowered by beating, the flocculation tendency increases.

As more fibrils are brushed out of the fiber surface there is a greater tendency for fibers to form clots as they collide. At the same time, more shearing force is required to separate the entangled fibers. The flocculation tendency, therefore, is proportional to degree of fibrillation.

5. *Wood Species or Pulping Treatment*—Tendency to flocculate appeared to be almost directly proportional to fiber length.

The pulps tested, in order of decreasing flocculation tendency, were: (a) bleached kraft (50% Douglas fir and 50% hemlock); (b) unbleached sulfite (hemlock); (c) bleached sulfite (hemlock); (d) book grade groundwood (50% hemlock 25% white fir, 25% spruce).

6. *Chemical Additives*—

a. *Alum:* The addition of alum to a pulp suspension in filtered water, pH 6.8, sufficient to lower the pH to 6.6 sharply increased flocculation. The effect of further additions of alum was to disperse or retard flocculation. In the pH range of 6.3 to 4.6 the addition of alum to bleached sulfite increased the time to flocculation by 17 seconds. Both of these observations are in agreement with those of Wollwage and Erspamer[2]. The increased flocculation which occurred when alum was first added was due to an isoelectric condition brought about by reducing the negative charge on the fiber. Dispersion, which occurred as more alum was added, was in part due to a positive charge being imparted to the fibers by the positively charged alumina floc. It is believed that alum increased the hydration film and thereby reduced the flocculation tendency.

b. *Surface Active Agents*—In order to determine whether surface active materials cause changes in surface tension forces at fiber-fluid interfaces, and thus affect fiber flocculation characteristics, the following surface actives were investigated: (1) non-ionic, (2) cat-ionic, and (3) an-ionic.

There was no discernible effect from the use of any of the agents used.

c. *Sodium Hexametaphosphate*—Sodium hexametaphosphate did not affect the flocculation characteristics of bleached sulfite. At concentrations in the range (0-0.005 N), there was no measurable improvement in the flocculation tendency. Cohen[3] reported a definite benefit from the use of the metaphosphate in conjunction with a refining treatment of the pulp. It was assumed that some refining treatment of the pulp was required before any improvement could be realized from the use of the metaphosphate.

d. *Colloidal Agents*—Slight concentrations of mannogalactan, in the range 0 to 0.5%, based on the dry fiber, decreased the flocculation tendency of bleached sulfite fiber. The addition of 0.2% mannogalactan increased the time to flocculation by 18 seconds. Considering the concentration involved, it is believed that the effect is not a result of viscosity modification. The colloidal gum must reduce the electrokinetic charge on the fibers and enable them to be more easily dispersed in a flowing fluid.

7. *Air in Stock*—The reduction of air content from 0.15% to 0.05% increased the time to flocculation by 7 seconds. Compressed air was introduced into the stock through a ceramic diffuser. The factor which limited the concentration of air was the consistency of the pulp suspension. Entrained air must have fibers on which to impinge. Thus, at low consistency the flocculation tube will exhibit a flotation effect if too much air is introduced. Removal of air was accomplished through the use of an aspirator, and a centrifugal jet pump. The pulp suspension was drawn from the retention tank by the aspirator and sprayed into a standpipe which was connected to the suction side of the pump. The effect of this leg on the suction side of the pump was to aid in attaining 27 in. (Mercury) of vacuum.

Summary

The following variables increase the flocculation tendency:

1. Consistency increase.
2. Temperature increase.
3. Fibrillation.

The following variables have no measurable effect on the flocculation tendency:

1. Hydrogen ion concentration.
2. Surface active agents.
3. Sodium hexametaphosphate.

The following variables decrease the flocculation tendency:

1. Alum, in concentration sufficient to lower the pH to 4.6.
2. Mannogalactan.
3. Air content reduction.

Of the several variables investigated, temperature, alum, and mannogalactan are the most effective in inhibiting flocculation. Temperature is the most effective of these in that a reduction of 20 degree Fahrenheit increases the time to flocculation by 35 seconds. Alum and mannogalactan, at optimum concentrations, are only half as effective as a reduction in temperature.

Bibliography

[1] WOLLWAGE, JOHN C., Paper Trade J. 108, No. 12: 41-48; No. 13:25-34 (March 23, 30, 1939).
[2] ERSPAMER, AUGUST, Paper Trade J. 110, No. 24:33-38; (June 13, 1940).
[3] COHEN, W. E., FARRANT, GWENNETH, AND WATSON, A. J., Paper Trade J. 132, No. 25:19-30; 133, No. 4:16-22 (June 22, July 27, 1951).

[4] Credit is given to Mr. James Gingrich, a summer employee at West Linn, for much of the initial work on this project.

U. OF ALABAMA GIFTS

MRS. MILDRED W. WARNER (right), President of Gulf States Paper Corp. (3-machine, 400-tons per day pulp and paper mill) Tuscaloosa, Ala., discussing plans for expanding pulp and paper curriculum at University of Alabama with ROBERT DIXON BROWN, Dean of Chemistry School. Mrs. Warner's company plans to donate $35,000 every year with the University providing $10,000 annually, the total to be used for additional building space, labs, offices, etc.

Announcing

an Even More Complete Service

for Users of Process Equipment

We are now Authorized Applicators for

SARAN-RUBBER and TYGON

For many years we have provided membrane linings, protected by brick or tile, to meet special chemical conditions beyond the protective limits of the usual Stebbins tile, brick or carbon linings.

To increase the scope of this service, and to meet an even greater range of acid and alkali conditions, we have established complete shop facilities at Watertown for the application of Saran-Rubber and Tygon linings. In addition, skilled field crews are available for installing these materials anywhere in the United States and Canada.

Regardless of the chemical or physical requirements, it will pay you to have Stebbins take the full responsibility for the design, installation and maintenance of your corrosion-resistant linings and vessels. Send an outline of your requirements for a practical Stebbins recommendation.

Complete Design, Installation and Maintenance Service throughout the United States and Canada

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Specialists in Design Installation and Servicing of Linings and Tile Tanks

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Engineering and Manufacturing Company, Watertown, N. Y.

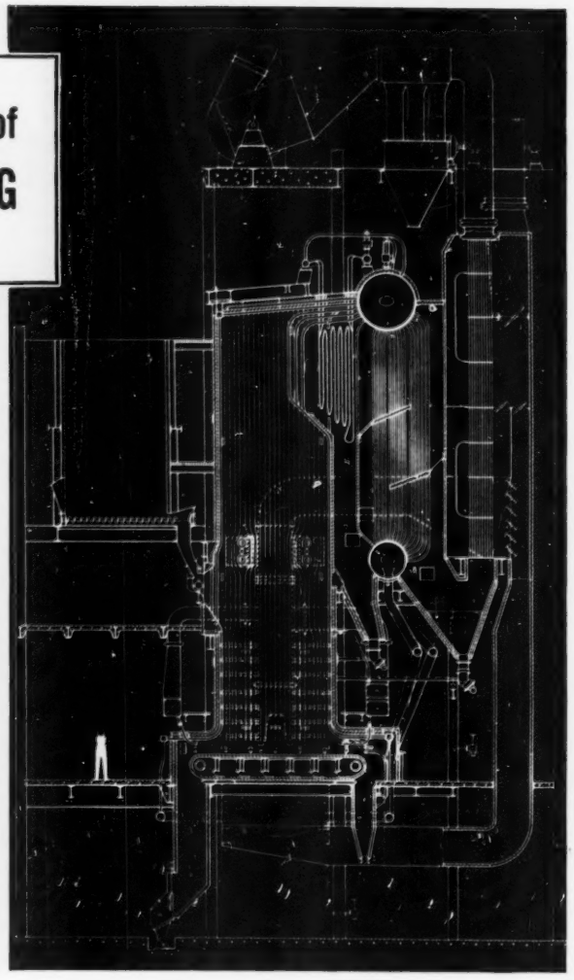
STEBBINS ENGINEERING CORP. - TEXTILE TOWER, SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. - CASTLE BLDG., MONTREAL, CANADA

Now you can Burn Bark

reliably • efficiently • economically . . .

...with the new C-E method of SUSPENSION BURNING



Here is a revolutionary, new bark burning method – proved in service – that will soon be paying impressive dividends to prominent pulp and paper mills all over the country. Several companies have units, similar to that illustrated, in service, under construction or on order.

Suspension burning – primary feature of the new C-E system – overcomes the drawbacks of former bark burning methods.

Bark or hogged wood is fed into the furnace by specially designed spreader units at a considerable distance above the grate level. Preheated combustion air is introduced through rows of nozzles arranged to assure extreme turbulence in the furnace.

Caught in a swirling gas mass, the bark is flash dried and most of it burns in suspension. The remainder – a very small proportion – burns quickly and evenly on the grate.

The C-E method has proved highly successful in burning oil in combination with bark or hogged wood – or for burning oil alone when desired.

Reports from the initial installation – now in service for more than a year – show that overall savings have been very substantial, that performance has been excellent and that availability is exceptionally high – actually better than 99 per cent.

So if you have bark, wood refuse or other cellulose waste materials to utilize, you will want to know more about this new method. The services of the Combustion organization are freely available to your engineers and consultants.

COMBUSTION ENGINEERING, INC.

200 Madison Avenue • New York 16, N. Y.

B-592

PRODUCTS FOR THE PAPER INDUSTRY INCLUDE RECOVERY UNITS, STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; ALSO PRESSURE VESSELS
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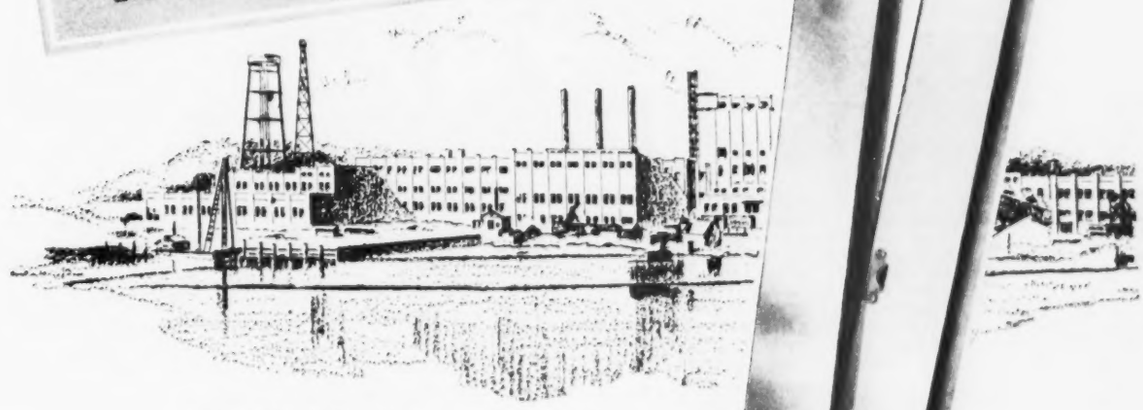

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- **Laminated Plastics**
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★ ★

HARRISON HOT SPRINGS, B. C., MEETING

EVERY MILL IN BRITISH COLUMBIA and several in Northwest states and Eastern Canada were represented at the Spring session of the Technical Section, Western branch, Canadian Pulp & Paper Association, Harrison Hot Springs, B.C., Mar. 26-28.

More than 100 heard a review of conditions in Europe by Dr. W. F. Holzer, assistant to the vice president in charge of manufacturing, Crown Zellerbach Corp., San Francisco; an outline of coast forestry problems by Dean Lowell Besley, of the University of British Columbia, leaving for Washington, D.C., to become executive director of the American Foresty Association; and papers by Gleb Goumeniouk, consulting engineer, and others.

Keith Eadie, plant engineer, MacMillan & Bloedel at Port Alberni, was elected chairman, although unable to attend owing to illness. He succeeds Marion F. Smith, Sidney Roofing & Paper Co. First vice chairman is Dr. Ralph Patterson, Powell River Co.; second vice chairman, L. W. Pumphrey, Westminster Paper Co.

Bert Joss, assistant secretary, Technical Section, CPPA, Montreal, brought greetings from the East and announced the Summer technical meeting in 1954 will be held in Victoria at the Empress Hotel, in June.

Powell River Co.'s annual award for the best junior technical paper was won by Ed Barnes, Pacific Mills, whose subject was variables in zinc hydrosulfite bleaching of groundwood.

KEITH EADIE, Plant Engineer, MacMillan & Bloedel, Pt. Alberni, B. C., who is new chairman of Tech. Section, Western Branch, CPPA.

W. A. Dale, resident engineer of the Woodfibre mill of Alaska Pine & Cellulose, discussed the feedwater treatment problems encountered at that mill. D. D. Hall, material handling manager of the E. B. Eddy Co., Hull, Que., emphasized the importance of efficiency in handling solid pulp.

"It is generally agreed that little advance has been made in a pulp mill which continues to use machines which produce pulp containing 70 percent water," said Mr. Hall. "A pallet load of folded 30 percent A.D. laps weighs less than 2800 pounds, whereas the same load of sheet 50 percent A.D. pulp weighs 3400 pounds."

Experience in the operation of the woodroom and groundwood mill of Elk Falls Co., newsprint mill at Duncan Bay, Vancouver Island, was recounted by J. W. Hill, groundwood superintendent. The woodroom described in PULP & PAPER (Sept. 1952) is designed to handle small salvage logs. Physical effort on the part of the operators consists of manipulating pushbuttons or levers grouped in three operator stations. Two men alternating on the three stations handle 20 cords of wood an hour.

Dr. Holzer devoted most of his talk to observations in the Scandinavian countries.

"Every department of a pulp and paper mill at one place or another was undergoing extensive remodelling," reported Dr. Holzer. "The wood room was the scene of installation of better drum barkers, and more extensive conveyer systems. One mill reduced its labor crew in the woodroom from 45 to 10 per shift with a well designed conveyer system. Addition of forced circulation systems to digesters, both sulfite and kraft, continues and is nearing completion. Almost universally the strainer ring is below the center line of the digester, and liquor return is to top and bottom in a split flow. On sulfite digesters a plate-type heater is being introduced, which is self-cleaning through reversal of flow."

Mr. Goumeniouk fascinated his listeners with his conversational discussion of the effect of air on drainage and sheet formation on a Fourdrinier paper machine. He traced the effect and behavior of air in the stock and its ultimate influence on paper sheet quality.

"Because of the characteristic of air deposits to remain virtually unseen, air forms one of the major problems of headbox design," said Mr. Goumeniouk.

AT HARRISON, B.C.—top row (l to r): ROGER SHOUVLIN, Bauer Bros., nephew of JOSEPH SHOUVLIN, Pres. of Bauer Bros., on first trip to West Coast; MARION F. SMITH, Sidney Roofing, retiring Coast Section Chairman; DAN WILLIAMSON, new Mgr. of Howe Sound Pulp Co.; D. D. HALL, E. B. Eddy Co.; R. W. WELLWOOD, U. of B. C.; H. C. GRAHAM, Elk Falls Co., reading PULP & PAPER. NEXT GROUP —delegates from U. S. A. (l to r): WALTER HOLZER, Crown Z; HAROLD QUIGLEY, Crown Z; H. A. (GOB) DES MARAIS, Penn Salt of Wash.; BRIAN SHERA, Penn Salt of Wash.; BOB BAER, Griffith Rubber. Two at right of middle row are: W. A. DALE, Alaska Pine; BERT JOSS, Canadian Tech. Section, Montreal. Below (l to r): L. W. PUMPHREY, Westminster Paper; HARRY ANDREWS, Powell River Vice Pres.; ED BARNES, Pacific Mills, winner of Powell R. Award; RALPH PATTERSON, Powell River; GLEB GOUMENIOUK, Consultant; J. W. Hill, Elk Falls; JACK GODDING, Pacific Mills.

Celanese Corp.'s Report

Celanese Corp. of America's net income dropped from $24,800,263 in 1951 to only $9,214,367, in 1952. Effects of "scare buying" at the start of the Korean War and sharp drop in textile industry were mentioned in the company's report. Sales dropped from $202,651,014 to $166,711,033. Chemical division sales, however, reached a new high; plastics sales were below the previous year.

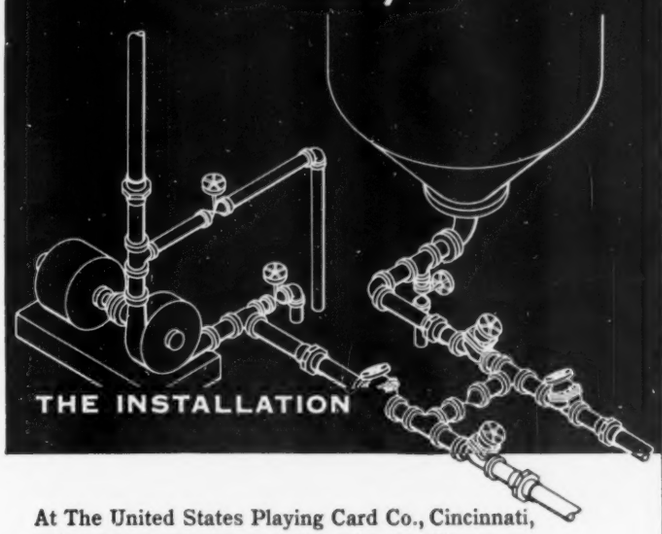
Work Starts at Hoberg

A utility service one-half mile tunnel linking the two mill divisions of Hoberg Paper Mills, Green Bay, Wis., is now being built. It will also house a steam line from Division A boiler plant to the new torula yeast plant to be built adjacent to the sulfite mill. Helmick & Lutz, Minneapolis engineers, designed boiler plant, tunnel and yeast plant.

Rasmussen & Co. Move

T. Rasmussen & Co., Ltd., paper and board mills agents, have moved to new offices in London. Their new address is Greenwich House, 10/13 Newgate St., London, E. C. 1, England.

What a Difference in Valve Behavior ...on Heavy Coating Liquids for example



At The United States Playing Card Co., Cincinnati, using Crane Diaphragm Valves in handling paper coating "enamels" from storage tanks to pumps.

VALVE SERVICE RATINGS

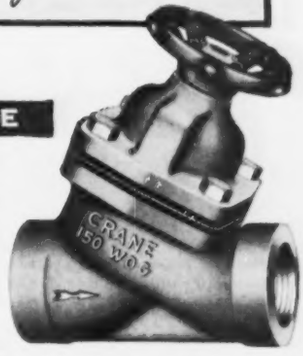
SUITABILITY:	None other like it
FEATURES:	Fluid can't get into bonnet
MAINTENANCE COST:	None
SERVICE LIFE:	No sign of wear after 3 years
OPERATING RESULTS:	Trouble and waste stopped
PRICE:	O.K. — No premium
AVAILABILITY:	Crane Catalog item — No. 1610

THE CASE HISTORY

Previously, ground plug cocks and conventional gate valves were used. During normal shutdowns the heavy coating liquid would build up on seating surfaces, in stem threads and working parts. The cocks and gates would "freeze up"; were hard to operate, couldn't be shut tight. Recurring maintenance, cleaning, and replacements were a costly, annoying problem.

Switching to Crane Diaphragm Valves solved the problem. Their sealed-to-fluid bonnet and soft disc insert did the trick. None of the 48 Crane valves installed beginning more than 3 years ago, has needed service of any kind. They continue to operate freely and easily.

THE VALVE



There are many more ways you can benefit by complete, dependable isolation of fluid and valve working parts. Crane Packless Diaphragm Valves are equally effective under corrosive conditions, and on erosive fluids—sludges, slurries, etc. They also keep your product contamination-free. Choose these valves to your needs from a wide variety of body, disc, disc-insert, diaphragm, and lining materials. See your Crane Catalog or local Crane Representative.

THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
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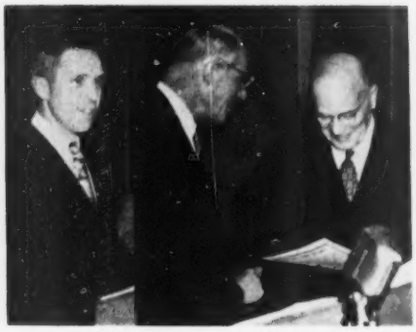
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

PAPER SCHOOL'S 20th YEAR

327 NOW HAVE COMPLETED FOUR YEAR COURSE

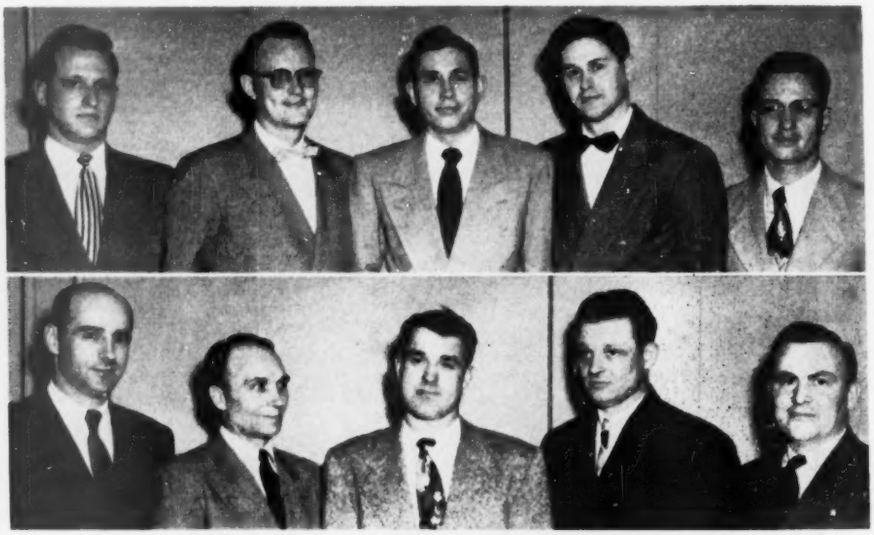
AT CAMAS GRADUATION (l to r): WALTER C. JACOBY, Asst. Sulfite Supt. of Camas Mill, who presided at Graduation as Acting Provost of School; ALBERT G. NATWICK, for 20 years its Dean and now new Resident Mgr. of East Texas Pulp & Paper Co. mill being built at Evadale, Tex., and PROF. BROR L. GRONDAL, veteran U. of Washington Forestry Professor, receiving Honorary Ph.D. from his old friend, Mr. Natwick, on behalf of the School.



STILL A UNIQUE INSTITUTION in the world of pulp and paper, Crown Zellerbach Paper School in its March "Commencement" at Camas, Wash. completed 20 years successful education conducted for, and largely by, Crown-Z employes. This unique educational institution has accomplished much and has received international recognition—in its early days as an organization established by a manufacturing firm to provide educational possibilities for its employes; again, later, when the school became college accredited; and most recently when up-graded to include a college-accepted graduate course.

To date over 2900 students—employes of CZ mills at Camas, West Linn or Leb-

TOP ROW (l to r)—FOURTH YEAR CLASS HONOR AWARD WINNERS: Richard Zak, Charles Young, Donald Preuss, Albert Beauchamp and Charles DeVoe.
LOWER ROW (l to r)—THIRD YEAR HONOR AWARD WINNERS: Daniel C. Leary, Charles Gardner, William P. Carr, William P. Brock and George Schiesl.



G. H. GALLAWAY, new Resident Mgr. of Camas Mill and new Regent of the School, who passed out the diplomas, is shown with SECOND YEAR HONOR AWARD WINNERS (l to r): LEONARD BARTEL, Mr. GALLAWAY, CURTIS HUGHEY, VERLIN R. COTTON and WILLIAM T. JESSETT.

FOURTH YEAR CLASS: Row one, l to r: Ruben A. Vogel, Charles E. Young, Glen C. Scharback, Robert M. Soden, T. J. Wagner, William F. Farley, Robert R. Skill. Row two: Roland G. Harris, Albert J. LaRose, Donald K. Preuss, Albert J. Beauchamp, William R. Thomas, Jack W. Buhler, Dale L. Darling, Harold E. Hickam. Row three: John C. Barnes, Oliver F. Chaplin, Charles T. DeVoe, Robert B. Trosper, Edwin A. Woodworth, Jr., Willard L. Carlson, Gerald L. Newberry, Robert L. Steinhauer. Row four: John M. Gant, Charles Evans, Richard Zak, Donald Robins, Howard Burrelle, Walter Logsdon.

Announcing

TWO OUTSTANDING NEW STOCK PREPARATION MACHINES

E. D. JONES & SONS COMPANY

has taken over the manufacture and sales in North America of the Lamort High Frequency Screen and Lamort Cellular Filter, adapted from designs of E. & M. Lamort Sons, Vitry-Le-Francois, France.

E.D. Jones Lamort

CELLULAR FILTER

Equally adaptable for white water, raw water or as a pulp thickener, the Lamort Filter is notable for its excellent performance under all conditions, delivering peak efficiency under normal load or surges. Completely automatic. Uses no chemicals and rarely any make-up fibre. Requires only a small space. Recovered stock of high consistency — 8% to 10%.

E.D. Jones Lamort

VIBRANT SCREEN

Simple and sturdy in design. The Lamort Screen has unique advantages — featuring high capacity, a new method of shock absorption, simple efficient adjustment of stroke intensity, unusual ease of cleaning and servicing.

Jones versions of the two machines will be designed for American Mill conditions. First Jones units will be completed within a few months. Photographs, specification data and other information now available.

E.D. Jones

For full details write

E. D. JONES & SONS COMPANY, PITTSFIELD, MASS.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

THIRD YEAR CLASS: Row one, l to r: James E. McCourt, Morgan J. Rees, George E. Schmelzer, O. P. Aggarwala, Reuben V. Brown, Gerwin P. Dayton, Russell E. Lawton. Row two, Charles O. Luchterhand, Edmund H. Wagner, Charles E. Gardner, Max A. Hohnbaum, Arthur W. Hagen, George J. Schiesl, Ross L. O'Brien, Hollis W. Fleischman, Ralph A. Bold, Daniel C. Leary. Row three: Donald E. Clearwater, Kenneth W. Wind, Elwyn W. Stroup, Lloyd D. Johnson, William P. Carr, Jack R. Sease, Curtis E. Sawyer, William P. Brock. Row four: Wendell L. Warren, Achie I. Otnes, David S. Platt, Rex R. Morris, Ralph H. Brothers, Donn E. Nissen, William E. Ginder.

anon (last two in Oregon), main office and subsidiaries in Portland, Ore., or at tributary woods operations—finished at least one course year and 327 completed the whole 4-year undergraduate course.

The institution is headed by three regents—R. O. Hunt, company vice president, San Francisco; G. H. Gallaway, recently named resident manager at Camas —himself an early graduate of the school; and M. J. Otis, resident manager at West Linn. Administrators include Acting Provost W. C. Jacoby, assistant sulfite superintendent; Dean of Graduate School Dr. W. M. Hearon, assistant director of research; Dean of Undergraduate School F. W. Flynn, assistant kraft mill superintendent, and Associate Dean C. A. Enghouse, assistant resident manager at West Linn.

The school has grown to such size that this year's graduation exercises were held on *two successive nights*, honoring 81 first-year and 50 second-year students the first night and 42 third-year and 33 fourth-year students on the second night.

Dr. U. G. Dubach, Lewis & Clark College, addressed the first group on "The American Way." pointing out that America emerged from World War II with great prestige but now finds itself "with the lowest." He said that unless the American people get the same high quality of leadership in government that they have in industry, this may become a second or third-rate country.

Dr. Roy C. McCall, University of Oregon, in addressing the older students the next night, paid tribute to the school, to the parent organization and to personnel concerned. He called attention to the "realistic educational situation" created at Camas. Instead of preparing people who do not have the "will to learn"—so characteristic of conventional schools, the paper school students participate because they do have it. When students want to learn and "hard-headed industry" seeks to provide conditions for promoting this idea—it's good, declared the speaker.

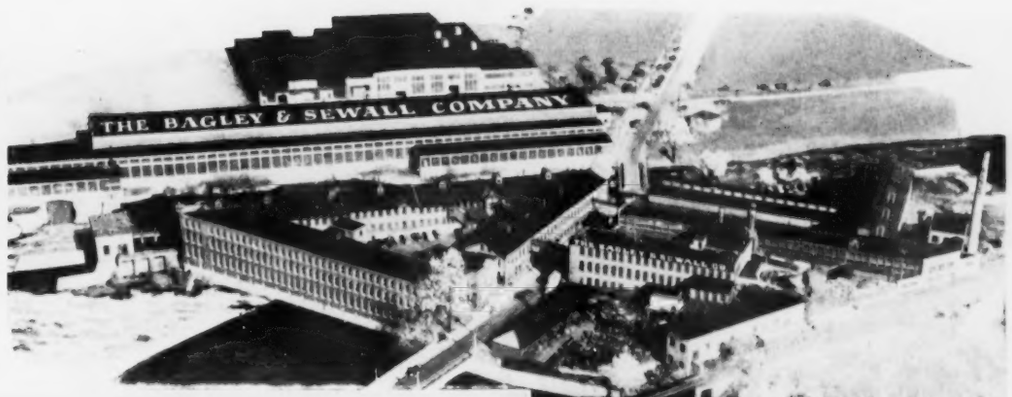
A. G. "Buff" Natwick, assistant resident manager of Camas plant from 1934 until he retired early in March to become resident manager of the new East Texas Pulp & Paper Co., Evadale, Texas, was dean of the school from its inception 20 years ago until earlier this year when he was elevated to provost, new title in the school. At that time present deans of graduate and undergraduate schools and the acting provost were also named.

Through Mr. Natwick, who attended the graduation exercises, the school con-

PART OF SECOND YEAR CLASS: Row one, l to r: Daniel H. Hicks, Blanche I. Dear, Roberta E. Geidl, Pearl E. Craig, Helen L. Wagoner, Margaret A. McGirr, William W. Frierson. Row two: Harold E. Hafliger, Vernon Stolee, Jerry C. Stroman, Dean T. Callahan, Wesley S. Hicks, Malcolm V. Greig, Vernon I. Morgan, Joe J. Barratt. Row three: Richard B. Zimmerman, Archie L. Smith, Ralph W. Jantzer, Gerald B. Trafton, Kelton B. Neal, Curtis E. Hughey, Leslie A. Trenner.

PART OF SECOND YEAR CLASS: Row one, l to r: Franklin H. Terrall, Edward W. Agun, Merle E. Craig, Kenneth L. Lorenz, Wallace H. Matthews, Frederick J. Ashworth, Paul A. Larson. Row two: Roy H. Meckley, Ralph S. Jacobson, Donald J. Cartier, Charles E. Beck, Norman T. McLaury, Morris R. Rivers, Roland A. Tedesco, Carl P. Arvidson. Row three: Dell M. Fitzgerald, Leonard Bartel, Reuben Bafus, Frederick H. Milligan, Dudley Winters, Harold D. Thew, Elbert B. Lindsey.

OFFICE AND BUILDINGS 1953



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Back to about 1890 in our history, on the theory, "The faster the operating speed, the lower mill operating costs," Bagley & Sewall designed and built much wider and faster running paper machines than thought possible at that time.

Today, Bagley & Sewall's newest designs are still setting the pace in wide and faster running paper machines. With the most modern facilities and having one of the largest and best equipped machine shops and foundry capable of producing papermaking machinery, makes this possible.

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PART OF FIRST YEAR CLASS: Row one, l to r: Maxine Bethel, Ada Goiburn, Sylvia Goiburn, Mary Elizabeth Reinhart, Mickie L. Thornton, Frances Gilbertson. Row two: Robert J. Heater, Frederick D. MacArthur, Reuben A. Marti, Rile E. Postal, Frederick H. Camets, Richard G. Carter, Hans A. Borresen, Thomas C. Paisley. Row three: Loren Rhodes, Lowell Bobbitt, William Jessett, Lester L. Zehner, James W. Nichols, Robert D. Wiese, Wilbur F. Bellinger, Robert C. Hitchcock. Row four: Don J. Conners, Bernard L. Smith, Don R. Couture, Richard G. Cleaver, Roland E. Bennett, Robert P. Lawson, Roy C. Sinclair, William W. Locke, Gene L. Yarnell, Allen D. Kirsher, Roland L. Sundstrom.

PART OF FIRST YEAR CLASS: Row one, l to r: Wilbur Kalmbach, Harding T. DiCenzo, Richard L. McGhee, John E. Frederick, Paul M. Henry Jr., Charles H. Berger. Row two: Edward W. Craven, Owen Street, Daniel E. Beasley, David R. Storrar, Frank W. Lawrence, Verlin R. Cotton, Robert A. Bailey, John W. Hopp. Row three: Loren E. Murdock, Jerome R. Jendro, Lawrence D. Honeycutt, Jerome L. Kiedrowski, Leroy Saulsbury, Everett M. Menhennett, Jack W. Schatz. Row four: Charles E. Blacketer, Eugene R. Basian, Waldemar D. Herr, Albert C. Powers, Eugene E. Jacobs, Charles W. Davis, Porter A. Newman.

ferred on Prof. Bror L. Grondal, University of Washington college of forestry, a doctor of philosophy honorary degree—the school's highest award—for his "valuable contributions to the pulp and paper industry." His tireless cooperation has added much to forest products industry and his counsel, given during the school's most difficult days, contributed materially to subsequent success of this educational institution.

Dr. Grondal, long-time friend of Mr. Natwick, has taught many classes at the school as guest lecturer.

Graduation diplomas were awarded by Mr. Gallaway, the fourth-year students also receiving original copies of the new edition of *"Paper Making,"* a textbook published by the school.

Winners of top fourth-year awards, a one-week trip to Pacific Northwest mills, went to Donald Preuss and Charles Young, winning first place for Camas and West Linn respectively, Albert Beauchamp and Charles DeVoe, tied for Camas second place, and Richard Zak, West Linn second place winner. Third year winners: First place, William P. Brock, Camas, Daniel C. Leary, North Portland, William P. Carr, West Linn; second place, George Schiesl, Camas, and Charles Gardner, West Linn. Second year winners: First place, Leonard Bartel, West Linn, Curtis Hughey, Camas; second place, William Frierson, Camas, Ralph S. Jacobsen, West Linn. First year: First place, William T. Jessett, Camas, Verlin R. Cotton, West Linn; second place, Robert P. Mills, Camas, Darrell Thomas, West Linn.

Winners of honorable mention, each receiving 2-year PULP & PAPER subscriptions include the following: First year, Richard Carter, Tom Paisley, Roland Sundstrom and Hans Borreson, Camas; Dan Beasley and Paul Henry, West Linn; second year, Joe Barratt, Del Fitzgerald, and Blanche Dear, Camas; Roy H. Meckley, West Linn; third year, Rex R. Morris and Morgan Rees, Camas; James Palmer, West Linn; fourth year, William Farley and Jack Buhler, Camas; T. J. Wagner, West Linn.

The faculty and their Camas or West Linn mill positions—T. W. Leedham, division industrial engineer, professor of first year class; John Grill, assistant supervisor of mill purchases, associate first year professor; A. M. Cady, general foreman of departmental maintenance and riggers, second year professor; H. C. Hall, technical assistant to sulfite superintendent, associate second year professor; R. B. Haight, training supervisor, third year professor; L. F. Maybach, project engineer, associate third year professor; G. D. Bailey, process engineer, fourth year professor; L. R. Giersch, paper mill technician, associate fourth year professor; D. P. Ashton, acting assistant technical supervisor, associate professor; Leona Blair, stenographic supervisor, registrar; J. L. Edwards, specifications—technical department, administrative assistant; J. A. Butterick, napkin department foreman, administrative assistant. Faculty advisors—P. V. Millard, assistant to supervisor of product quality and development; Gus Ostenson, manager of paper production; F. R. Sievers, groundwood mill superintendent; E. H. Nunn, assistant to resident manager; C. A. Anderson, wood technologist (all from Camas except Mr. Nunn from West Linn).

Outside lecturers included Jack Wilcox and James Gow, Electric Steel Foundry Co.; Lowell Edwards, consulting engineer; Clarence Richen, CZ chief forester; W. I. West, Oregon State College; Svarre Hazelquist, Weyerhaeuser Timber Co.; R. E. Flourine, Whiting Corp.; B. W. Launtz, Western Waxed Paper Co., and O. R. Johnson, Western Gummed & Coated Products.

IN PULP AND PAPER INDUSTRY NEWS LAST MONTH

THESE MEN MADE NEWS (l to r): WM. J. ELKINS, named Sales Engineer for Rice Barton Corp., covering selected mills in New York and New England.

HARRY E. BEANE, appointed Vice Pres. of Sales for The Bristol Co., Waterbury, Conn., has been with Bristol since 1920, becoming Sales Mgr. of Instrument in 1943 and Gen. Sales Mgr. in 1947.

FREDERICK WIERK, has become Engineering Director of National Container Corp. He was Asst. Mgr. of Construction for General Chem. Div. of Allied Chem. & Dye since 1951.

AWRAN CARHART, new Vice President and Manager of Pacific-Western Gear Works' subsidiary, Southwestern Gear Works, at 117 North Palmer St., Houston, Texas.

WILLIAM C. CANTRELL, recently named Southwestern Representative for The Bauer Bros. Co., Springfield, O., to succeed his father, Chas. C. Cantrell.

JOE SMART, U. of Wisconsin graduate (master's 1939) is new Asst. Paper Mill Supt. of Nekoosa kraft mill of Nekoosa-Edwards Paper Co.

Too Big a Bite

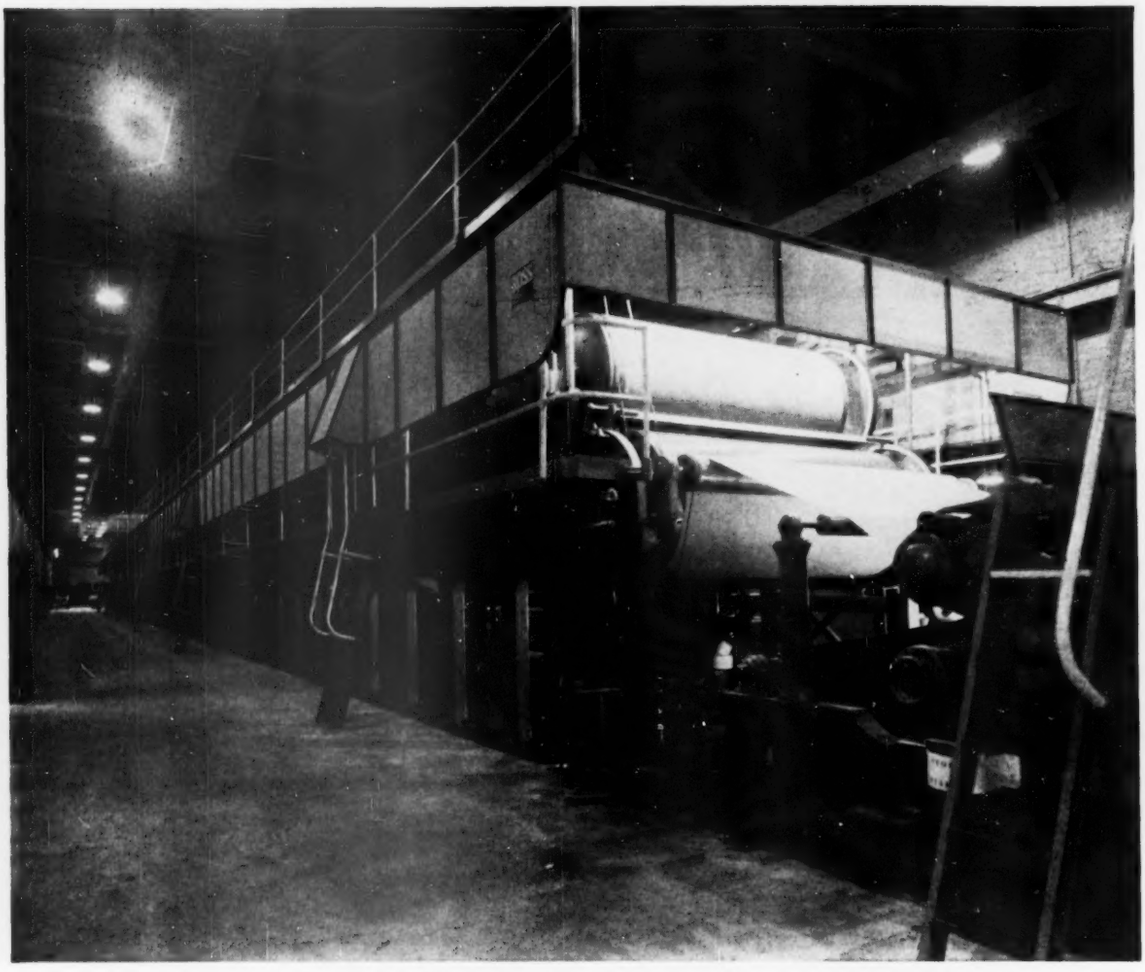
Approximately 11% of the annual forest removal is caused by *drain* . . . the wood destroyed by fire, insects and disease. This is non-recoverable loss and is proving to be largely avoidable under today's modern forest management.

On the brighter side of the picture, is the fact that in the federal government's four forest appraisals made since 1909, the ratio between annual growth and loss by fire, insects and disease has decreased from 28.8% to 11%. Any further lowering of this drain factor will mean that timber growth will more than equal total removal.

Weyerhaeuser foresters, pioneers in tree farming, have established that successful operation of a tree farm depends first upon a fire protection system sufficiently effective to hold annual fire losses below an established maximum. In the case of Weyerhaeuser West Coast tree farms this allowable loss is ¼ of 1% of the acreage . . . as compared to 3.4% nation-wide average.

This is just one facet of the Weyerhaeuser forestry policy which is designed to insure a continuing supply of pulpwood for the Weyerhaeuser sulphite and sulphate pulp mills.

PULP DIVISION WEYERHAEUSER



A STEP AHEAD IN DRYER DESIGN

Here is a dryer section that employs "high type" frames to eliminate the conventional pit—usually mussy—always inconvenient.

Another feature of note is the full length foot walks, front and back.

The vat, press and finishing sections that go to complete the installation also carry the very latest of modern features, all combining into the outstanding machine of the past year.

Paper machine by Black-Clawson . . . Preparation system by Shartle.

BLACK-CLAWSON

THE BLACK CLAWSON COMPANY • HAMILTON, OHIO

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HOT LIME-HOT ZEOLITE FEED WATER TREATMENT

FIRST YEAR OF OPERATION

By M. R. Rivers and K. J. Linehan

Crown Zellerbach Corp., Camas, Wash.

Describes One of New Type Feed Water Treatment Plants

This paper was given at Coast TAPPI meeting at Camas, Wash., in December and attracted considerable interest because it described results with what was a definitely new and revolutionary treatment plant when it was installed.

It is a Cochrane Corp. treatment plant installed by C. C. Moore & Co., Engineers and the first of its type in the Pacific Northwest. It is a hot lime-hot Zeolite plant and one of the first full scale plants for a pulp mill. Since then, a number have been installed in other mills.

Before 1947 the steam demand on our boiler plant was such that, with internal chemical treatment and blowdown, it was possible to keep the concentration of the water impurities in the boilers to a low enough point that no danger of deposits was incurred. This was also made possible by the fact that the raw water "makeup" at this time was only about 40%. With the advent of paper machine speedup, however, and the use of higher pressures on the machines, it was necessary to quench the flash steam from the driers before it could be pumped back to the steam plant. This quenching is done with raw water and hence the amount of contamination was increased materially. We had "makeup" sent to us at a rate as high as 70%.

Take the installation of additional direct steaming kraft digesters plus machine speedups, add two modern boilers with their high rates of heat absorption, combine this with a high percentage of makeup containing a high silica content, and you have the causes. The results, of course, were one tube failure after another.

In this period starting with the mill expansion until the installation of the treatment plant, our records show approximately 90 tube failures scattered among our various boilers. It would be safe to say that these 90 failures caused 60 unscheduled boiler shutdowns with resulting low steam output.

Our avenues of solution to this problem were rather limited, as we had but two choices. We could revamp the entire condensate system, permitting the return of only pure condensate and installing a small treatment plant for makeup; or we could go to a larger pretreatment plant, and thus delay revamping the condensate system until found necessary due to further expansion.

The foregoing has been a rather hasty sketch of the situation up to the planning stage of our treatment plant.

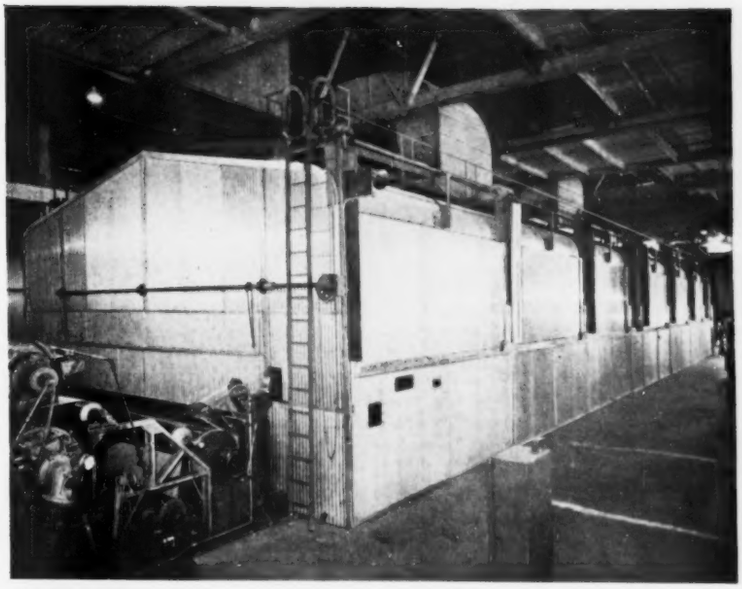
The planning itself consisted of several meetings with experts and having representative analysis of our raw water from our several sources sent out with the request for proposals, estimates, and guarantees. From these requests we received ten proposals from three different manufacturers. The receipt of these proposals merely crystallized the thinking that the hot lime zeolite process was the system we wanted. Thus the engineering wheels were put into motion and in a short time we had a 72,000 gal./hour hot lime and zeolite process that was guaranteed to produce an effluent containing not more than 2 ppm total hardness and not to exceed 2 ppm silica.

Composite water (condensate plus quench) returns to our immediate control at a point known to us as No. 3 hotwell. Located directly under this receiver are the sand filters which supply the makeup water to the system. From No. 3 hotwell the water is pumped directly to the sedimentation tank through a control valve. The effluent from the sedimentation tank flows by gravity to and through the filters. From the filters the water is pumped to and through the zeolite cells to the delivery pump which sends it to the deaerator and thence to the boilers.

With the over-all picture in mind let's return and look at some of this equipment a little more closely. No. 3 hotwell is merely a condensate receiver operating at atmospheric pressure. It has a temperature range of between 160 and 180 deg. F., with an automatic level controlled makeup valve. The makeup sand filters are of conventional horizontal design employing graded filter aggregates ranging from fine sand to ½ to 1-inch gravel. Following the flow from this point through the pump we find the next piece of equipment is the indicating and recording meter controller. This controller sends the necessary operational impulses to the two chemical feeders and also to the sludge blow-off valve. The chemical feeder is of the gravimetric loss of weight type. The timers can be set for a varied period of operation after the passing of a predetermined quantity of water. The passing of the required units of water causes the controller to send out the impulses that set the equipment into action.

The chemical feeders are merely a hopper with feeding mechanism attached, mounted on scales. The hopper is filled with material and the scales are then

MAIN OPERATING STATION OF THE COCHRANE CORP. TREATMENT PLANT AT CAMAS, WASH., MILL. GRAVIMETRIC FEEDERS ARE ON RIGHT; FILTER ON LEFT.



THE "ROSS-HOOPER" HOOD

Patent applied for

NEW Enclosed Type Steps Up Machine Efficiency and Reduces Operating Costs

Results of the operation of these advanced type hoods in prominent mills clearly indicate entirely new standards of performance. Constructed with lifting and sliding panels they provide total enclosure with instant access to any part of machine. Among many distinct advantages secured are—ideal confinement of vapors, 40 to 50% reduction in volumes of fresh air and exhaust vapors handled, with corresponding reduction in power required to handle same, exceptional steam saving, increased heat recovery, increased machine speed, reduced back pressure, fewer breaks in dryer section and less down-time, increased and more uniform moisture content of sheet and greatly improved working conditions.

These and their other advantages make these hoods a "must" for new machines and will justify replacement of existing hoods not incorporating their design and construction features.

ANOTHER SUCCESSFUL DEVELOPMENT OF

J. O. ROSS ENGINEERING CORPORATION

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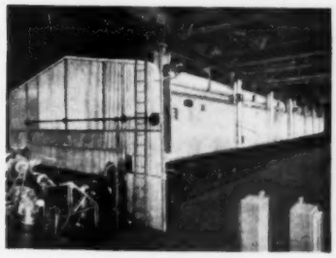


View of Ross-Hooper Hood with front lifting panels in closed or operating position.

Rear of Hood with sliding access doors closed.

Rear of Hood with sliding access doors open.

View of Dry End with lifting panels in operating position.

manually balanced. The free-moving end of the scale beam then controls the rate of feed.

The automatic sludge blow-off vlave is also operated on the time impulse basis, the units being approximately 4,000 gallons and the timer having a present setting of 80 or approximately 320,000 gallons to set the valve in motion. The valve is air-operated with a solenoid control on the air, and it stays open for a period of one minute.

Back now to the controller, we follow the flow through the main flow control valve. This valve is a standard air-operated water level controller, and discharges directly into a multiple spray nozzle in the top of the sedimentation tank.

The nozzles, of course, serve to divide the water particles minutely. Steam is also supplied at approximately this same point, directly into the dome of the tank. The tank is maintained under a steam pressure of between 4 and 5 psig, reduced down from 150 psig. The steam after entering the tank is directed against a baffle and deflected into the water spray, thus causing an effective mixing and heating. The non-condensable vapors are vented through a valve in the dome of the tank.

The two chemical lines enter the tank above the water line and spray down in about the center. The chemicals, water, steam and sludge all combine in the area directly above the cone. In this same immediate area the chemical reaction (precipitation of $CaCO_3$) and the adsorption of silica start and carry on as the precipitant flow moves down and out. This direction of flow continues until it reaches the lip of the cone and then it travels straight down. The effluent is thus left to flow up under the cone, up the pipe, and out the discharge.

In our case the main purpose of the sedimentation tank is to remove the silica and to reduce the hardness of the water. The hardness is reduced to a point whereby it would be economically feasible to remove the rest of the hardness by the zeolite process. This point is considered to be at about 38 ppm when the entering hardness is about 66 ppm.

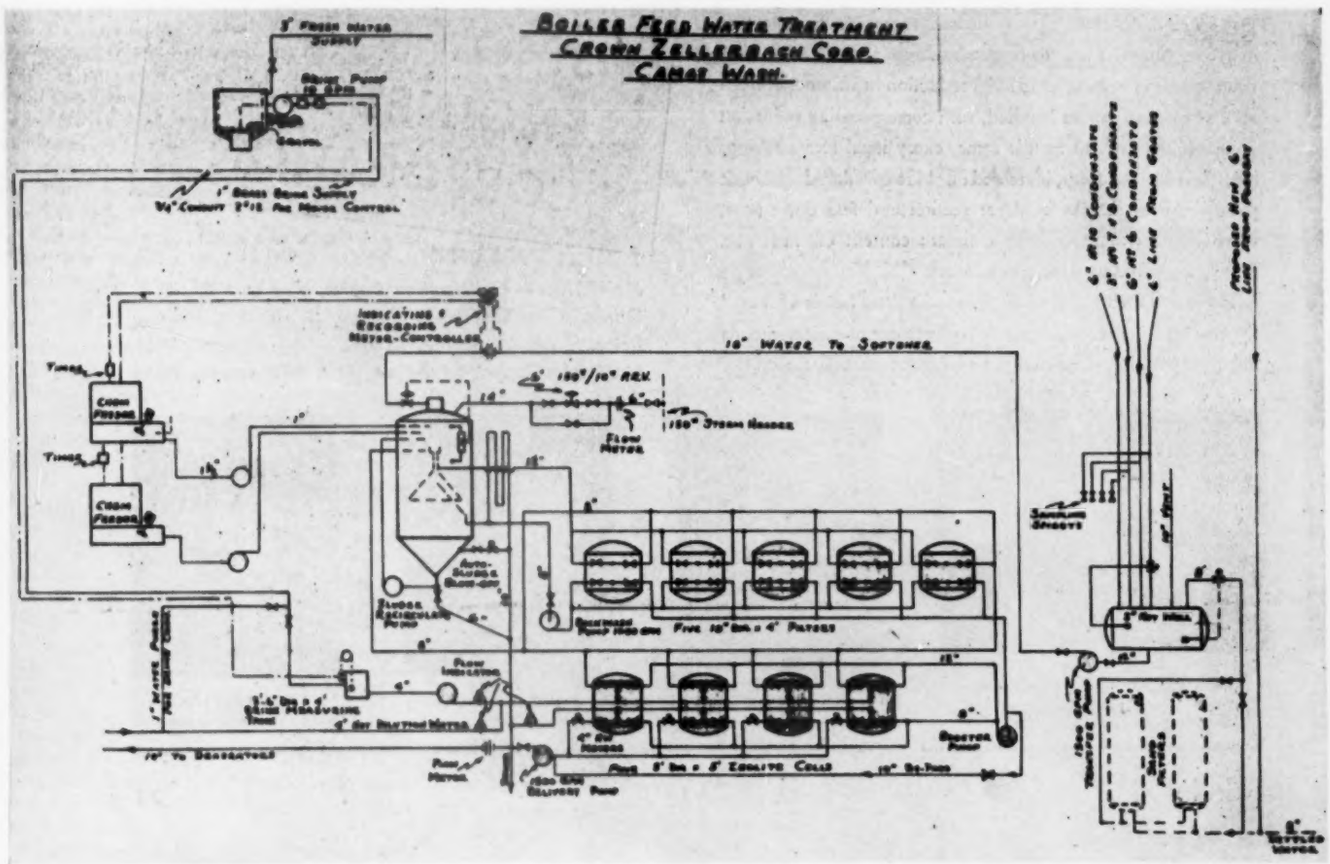
The reason for combining the processes of hot lime and zeolite is that the hot lime sedimentation can cut the total hardness approximately in half rather rapidly, but it would not be feasible to attempt to get zero hardness. The sedimentation is also excellent for the removal of silica, which was one of our main problems, being that our raw water contains approximately 35 ppm silica. With the zeolites, however, it is possible to obtain nearly zero hardness cheaply, relatively so, i.e., if the hardness is within the range of 20 to 40 ppm.

The effluent leaving the sedimentation tank at the top of the cone flows by gravity plus 5 psig pressure on the tank directly to the filters. We have five pressure filters operating in parallel. The filters are filled with varying grades of anthracite coal. Coal is used instead of sand and grave because of the possibility of adding silica to the water and because coal is easier to fluff with lower backwash flows. These filters remove any trace of sludge that may have carried over from the sedimentation tank. The effluent flow through the filters is from top down, thus depositing the sludge on top of the anthracite bed.

When it is found necessary to backwash the filters, the effluent valves to and from the filter are closed and the two wash valves opened. The backwash pump takes its suction from a line that it extended up under the cone of the sedimentation tank and discharges back into the tank above the top of the cone, thus saving water and heat and merely adding additional sludge recirculation. We attempt to backwash each filter daily when carrying loads of 12 million pounds or more a day as we have the last several months. The backwash is accomplished from the bottom of the filters up. Samples of the backwash effluent are taken and the wash continued until the effluent is sludge-free.

The treated water leaving the filters is picked up by a booster pump and sent to the zeolite cells. We have four zeolite softeners operating in parallel. These softeners are 8 ft. in diameter by 5 ft. high, and each contains 101 cu. ft. of a new type high temperature polystyrene resin zeolite supported on a bed of anthracite coal. The principle of operation is an ionic exchange of calcium and sodium. The zeolite removes the calcium from the soluble compounds contained in the water and replaces

FIG. 1—SCHEMATIC FLOW DIAGRAM OF BOILER FEED WATER TREATMENT PLANT AT CROWN ZELLERBACH CORP., CAMAS, WASH.


BOILER FEED WATER TREATMENT
CROWN ZELLERBACH CORP.
CAMAS WASH.
10" WATER TO SOFTENER
FIVE 10" DIA. x 4' FILTERS
FIVE 8' DIA. x 5' ZEOLITE CELLS

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You can depend on GENERAL, whatever your color need—for the whites and pastels that sell sanitary tissues, paper towels and table napkins; for the pleasant, attention-getting wrappings; for the deep and bright twistings that 'make' multicolored plaid seat covers and rugs. We have the correct dyestuff for every conceivable use.

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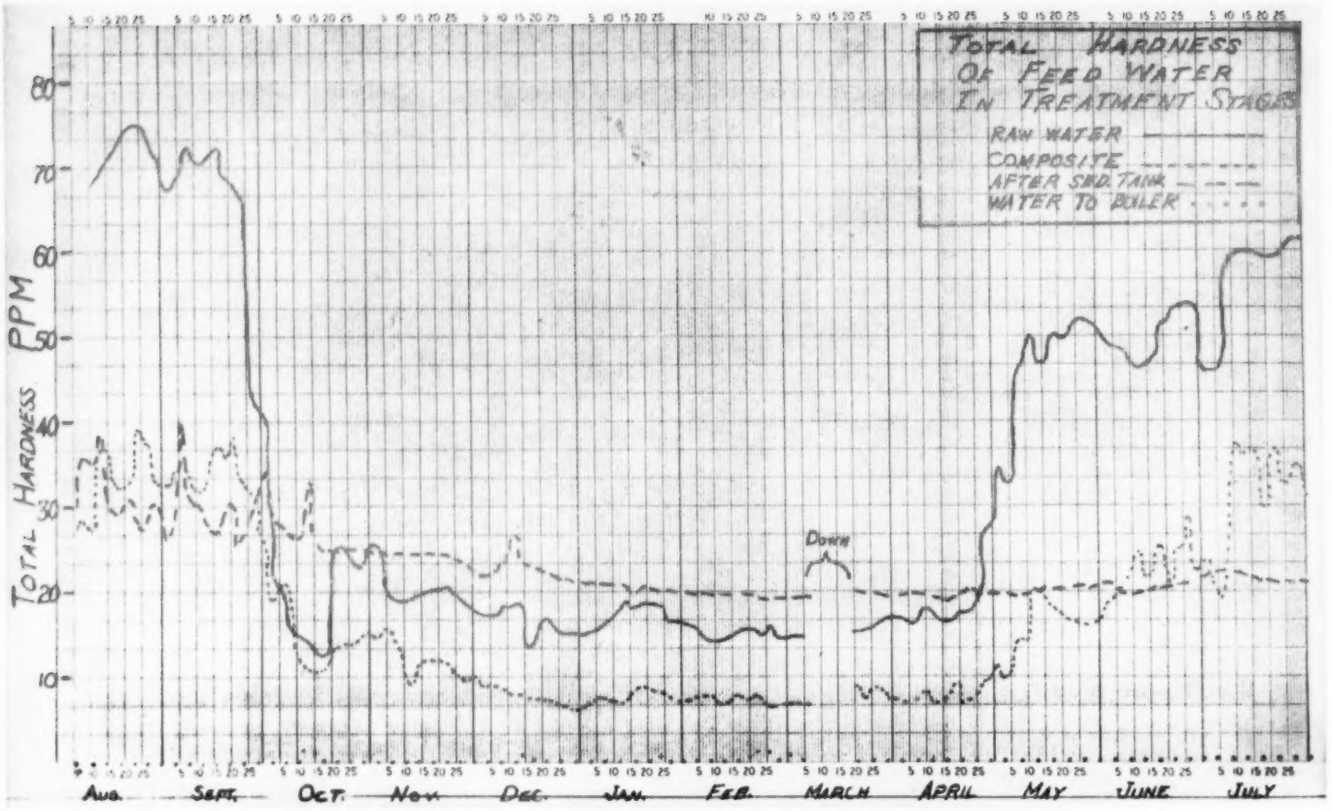

FIG. 2—TOTAL HARDNESS OF FEEDWATER. SHOWS RELATIVE HARDNESSES AT VARIOUS STEPS OF TREATMENT THROUGHOUT YEAR (AS PPM $CaCO_3$).

it with sodium. The resulting water is non-scale forming and has a pH of about 10. When the zeolite is exhausted, it is regenerated by passing a 65% solution of sodium chloride through it. The calcium and sodium again change places, thus restoring the sodium in the zeolite. The calcium chloride is then dumped to the sewer and the zeolite rinsed to remove the chloride. The zeolite is the ready to remove more calcium.

Salt is shipped to us in carload lots and dumped directly into the storage tank. Water is added to this tank daily to maintain a saturated solution of NaCl. From the storage tank the 100% salt solution is pumped to the measuring tank. When it is necessary to regenerate the zeolites, the solution is pumped from the measuring tank to the cells. A line take-off from the pressure side of the delivery pump is connected to this brine line, and thus the solution is diluted to approximately 65% before it reaches the zeolite cell. The regeneration retention time will be discussed later.

Our pretreating plant was put in operation Aug. 4, 1951. A brief indoctrination course had been given by the manufacturers representative and some written rules made out. Then we were on our own. For the first couple of months we sort of "followed our noses," gradually a pattern of operation evolved. As was planned originally the main operation was set up on an eight hour day, seven days a week, manned by a water treatment analyst and an operator. The assistant shift engineers were given brief operational instruction and assigned to the checking of the treating plant for the remaining 16 hours of the day just to be sure it kept moving on its plotted course.

As might be expected some of the originally established rules did not fit in with our operation. We started out with the idea that it was not necessary to backwash our anthracite filters until the gauge indicated a differential of a 10 ft. head. This rule was followed once, with the disturbing result of sludge carrying over into our zeolite softeners and prematurely exhausting them, and it took about a week of daily backwashing of both filters and softeners to clean up the mess. That experience established the rule of backwashing before the differential exceeded a four foot head.

The above experience showed that a definite change in the periodic operational schedule had to be worked out. Thus both the operational and control log were modified. Through the use of this log a very fine record of the past year's results has been obtained. We are thus able to compare our operation with other plants and able to check against manufacturers specifications.

Hardness Reduction

From this record, charts have been drawn showing graphically what has happened. The first chart shows the comparative hardness of the incoming waters, and the resulting reduced hardness in the water delivered to the boiler. As can be seen, we have considerable variation in the supply being received from our two sources, Lakamas Lake and the Columbia river. Except for the winter months these two sources are mixed in varying percentages depending largely on the lake level. As the chart indicates our winter supply from the lake had the lowest hardness, reaching a low of 10 ppm. A high of 78ppm was reached in late summer when our supply was 100% river water.

At present we have a situation where our paper machine condensate is polluted with quenching water. As a consequence all our returning composite water is being run through our treating plant. This water has a hardness variation of 6 ppm in February to 46 ppm in August.

The next hardness shown is that of the first stage effluent. During the first few months' operation we had considerable difficulty in obtaining a proper sedimentation mat, a condition we have found imperative for good operation. Our results during this time fluctuated considerably to say the least. Around the first of October, however, we started our MgO injection for silica removal, and found in addition that our flocculating difficulties also ceased. From that time on we have been able to obtain an average effluent hardness from the sedimentation of 20 to 25 ppm.

You will probably note that the effluent hardness is greater than either the raw or composite hardness during the winter months. This of course is the result of treating condensate along with raw water instead of sending condensate directly to the deaerator. Since chemical feed to the first stage is controlled by the volume of water going to the sedimentation tank and since it is necessary to maintain a fixed amount of alkalinity in the effluent from the treating plant, an increase in hardness results.

This chart next indicates the final hardness obtained from the treating plant. Except for eleven days out of the year we were able to obtain the zero hardness expected, with the highest effluent reading reaching 3 ppm. total hardness.

Silica Reduction

Originally it was felt that silica reduction would only be necessary while lake water was

to SOLVE PULPING PROBLEMS economically

BOWATERS SOUTHERN PAPER CORP. SELECTS

SPROUT-WALDRON 36-2 REFINERS

$50 Million Paper Mill Contract Let

A general contract for the construction of an integrated newsprint and sulphate pulp mill at Calhoun, Tenn., was let here yesterday by Bowaters Southern Paper Corporation to Fraser, Brace and Co., New York; Turner Construction Co., New York, and Roane Anderson of Tennessee, acting jointly.

The contract was let by Bowaters' representatives in the office of J. E. Sirrine Co., consulting engineers to Bowaters Southern Paper Corporation. The Sirrine firm was also engineers for the Coosa River co-operative newsprint mill in Alabama which is now in production.

Grading at the site, which is be... tween Chattanooga and ...

Greenville S. C. News
August 7, 1952

For:

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- ✓ HIGH CAPACITY
- ✓ FLEXIBILITY OF OPERATION
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THIS NEWSPRINT AND KRAFT PULP MILL

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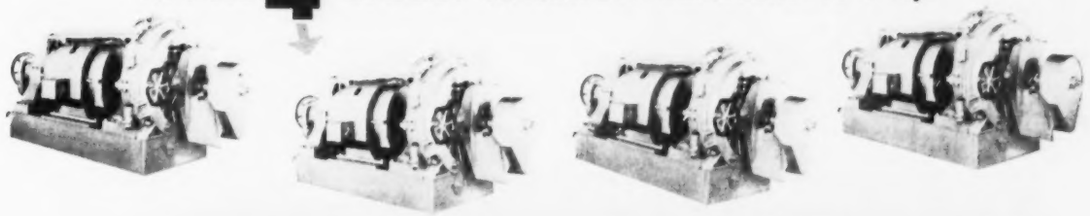

GROUNDWOOD TAILINGS AND KRAFT REJECTS

Have you a pulping problem? Send us the details for a careful analysis and recommendations. Write Sprout-Waldron & Co., Inc., 32 Logan Street, Muncy, Pennsylvania.

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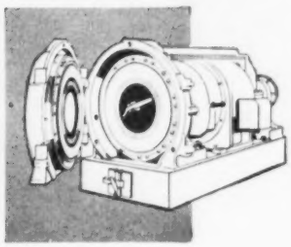

SPROUT-WALDRON

PULP REFINERS

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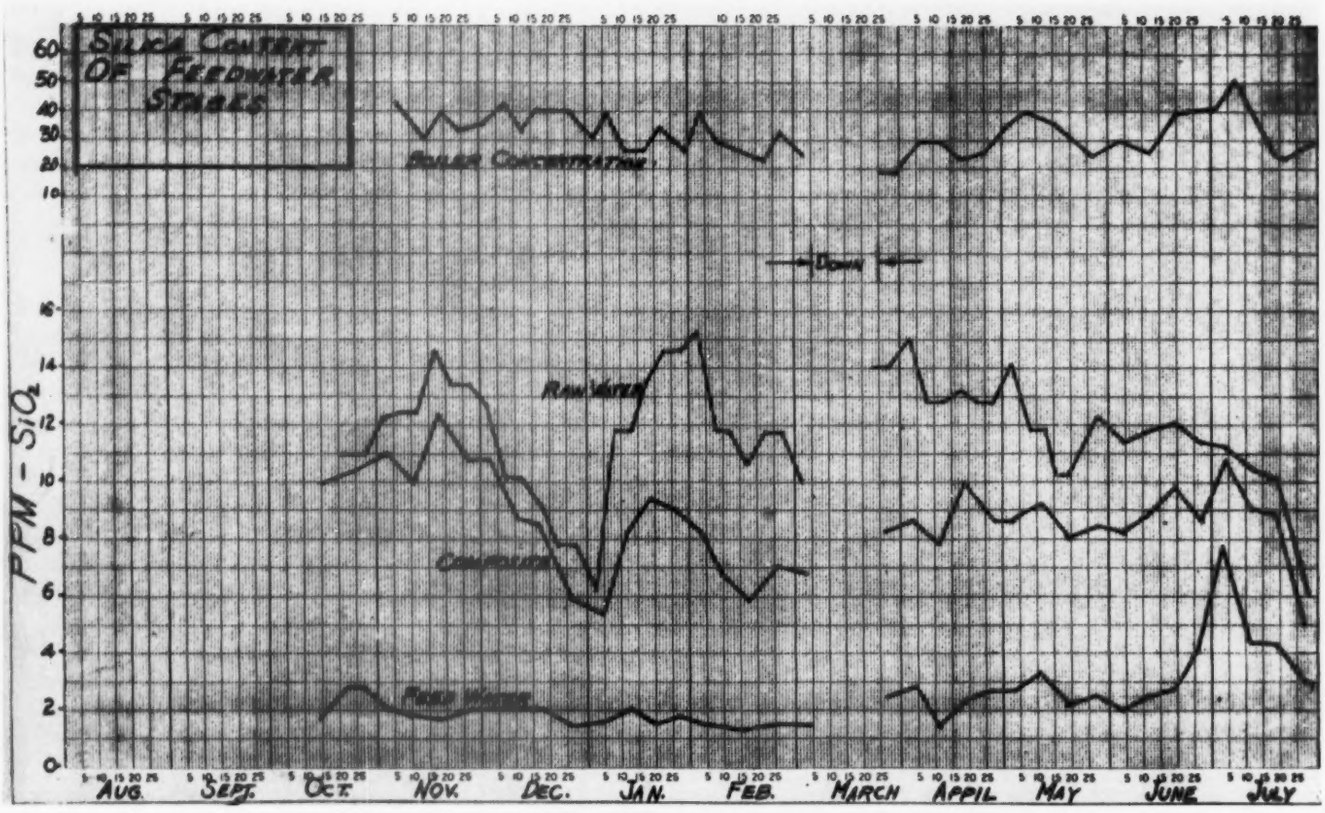


FIG. 3—SILICA CONTENT OF FEEDWATER STAGES. SHOWS CONTENT AT VARIOUS STEPS OF TREATMENT (AS PPM SiO_2).

being used, as this water showed the highest initial silica content. As a consequence MgO was not used until lake water usage started about the first of Oct., 1951. The results were immediately satisfactory and, as stated before, the MgO has an additional value of creating a good flocculating action in the sedimentation tank. The chart indicates a very satisfactory silica reduction except for a brief period during July when we attempted to get along without MgO. Our tests show that we have been able to keep the silica content of our boiler water below the ASME limit of 60 ppm while maintaining a total boiler concentration of 1200 ppm.

Zeolite Regeneration

When the treating plant was put on the line, a regeneration cycle was set up by the manufacturer's representative. At that time apparently exact information on regenerating this new type of zeolite had not been obtained. As a result until late in February, when we went down for an inspection, we were forced to regenerate considerably more than should be necessary with resulting high salt usage. Information then came through showing pilot plant regeneration results. At that time we set up the cycle now being used. We found that we were not exposing our zeolite for a long enough time at a high enough concentration of brine. We inject the brine (65% concentration) in 15 to 20 minutes and apply a slow rinse or dilution water through the brine distribution lines for from 40 to 45 minutes with the idea of keeping the brine in the zeolite for 30 minutes at a concentration of over 30%. When the slow rinse is completed, a fast rinse begins and is completed when the hardness test shows zero and the chlorine shows less than 26 ppm.

As would be expected we ran into mechanical difficulties as well as chemical.

The automatic blow-off valve on the sedimentation tank was originally installed with a reversible motor-operated-valve controlled by relays operated from the inlet flow controller. Due to the ever-present vapor from the sewer under the sedimentation tank, the motor on this valve had a rough time. After burning out twice it was decided to replace it with an air-head controlled from a solenoid-operated air valve. The solenoid was connected to the controller relay. Since that time this piece of equipment has performed satisfactorily.

It has been found advisable to backwash the chemical lines and check the chemical hoppers daily to prevent plugup of the lines and hangup in the hopper. Even with these precautions the chemical lines still scaled up badly. It was found possible, but rather difficult to clean the lime lines without removing them. On the MgO line, however, it was necessary to install new lines and clean the old ones at a later date.

We have described the operation and experiences of our first year. The troubles, were only minor. On the whole we have been quite well pleased with the job it is doing for us and the results we see in our boilers. We have not experienced a single tube failure since the pretreatment plant was put into operation, and this is a far cry from the 20 odd failures we were having each year. Upon inspection the boilers were found to be scale-free, the old scale has been removed and no new scale has formed.

R.R. Car Ferry Service Expanded for Wisconsin Mills

The Wisconsin paper industry provided the full shipload for the maiden voyage of the S.S. Badger, a new 410 ft. $5,000,000 car ferry of Chesapeake & Ohio Railway, when it recently entered service across Lake Michigan from Manitowoc, Wis., to Ludington, Mich.

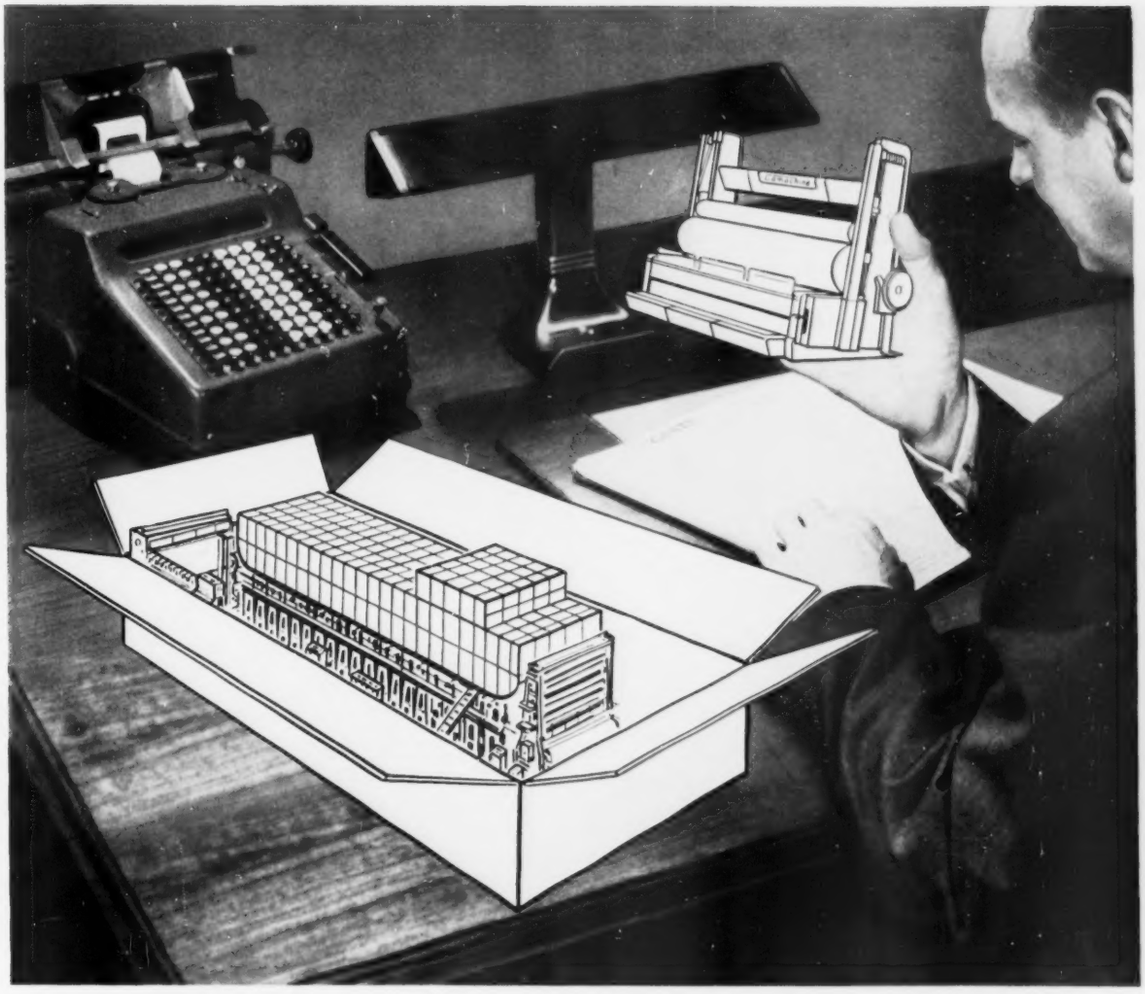
The Wisconsin Paper Group, cooperative traffic organization of the industry, also provided the initial load of the Spartan, sister ship of the Badger, a year ago.

First Bleachery of Type

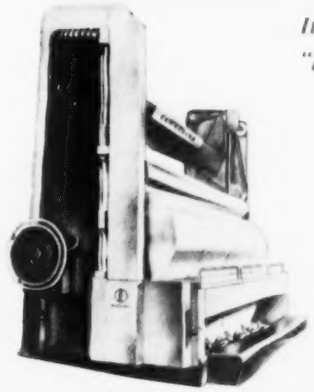
The first bleach plant where the 6-story building as well as bleaching towers, nine of them, were built by sliding form method of concrete construction is one at H & W Mill at Mobile, Ala., according to the builders, Rust Engineering. The building was literally hauled up by its own screwjacks in a continuous lift operation.

FOR MAINE FOUNDATION

C. W. CHURCHILL JR., left, The Rust Engineering Co., presents a check for $1000 to R. A. WILKINS, Vice President of Bird and Son, Inc., for a company membership in the University of Maine Pulp and Paper Foundation. Mr. Wilkins is Chairman of the Finance Committee for the Foundation.



WHAT IS THE COST OF THE WINDER?



Investigate Cameron's new IMPERIAL *ultra modern, high-speed mill-type winders, featuring hydraulic controls.*

It is sometimes expedient to purchase a winder as part of an overall paper mill "package". Even so, there's no need to wind up with less than a Camachine . . .

Camachine winders may be purchased for use with any new or existing paper machine. Study Camachine's rugged, dependable design—compare production records — compare the fine quality of Camachine-made rolls — and you'll find that a Camachine *adds no extra cost* to the package!

Why are more than half of the mills in the United States and Canada equipped with Camachines for top-quality winding? One reason is found in the highly specialized skills of Cameron engineers and artisans. Here, the *undivided attention* of every man is concentrated *exclusively* on the single problem of better roll production equipment. Consider, too, the advantage of Cameron's background of half-a-century of specialized experience. No wonder modern Camachines are so far ahead in speed, dependability, economy and winding quality! You are invited to consult Camachine engineers regarding the right equipment to meet your requirements.

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THE PROGRAM FOR GEARHART, ORE.

GEARHART MEETING CHAIRMAN

THIS TRIO is organizing and running arrangements for the Gearhart, Ore., Joint Meeting (l to r): FRED WELEBER, Technical Director, Publishers' Paper Co., Co-Chairman for TAPPI; HERBERT BECK, National Aniline's Northwest Mgr., Portland, Ore., who is Chairman of Registration and Housing, and WILLIAM W. CLARKE, Paper Mill Supt., Longview Fibre Co., Co-Chairman for Superintendents.

Back to the razor clam diggers' paradise at Gearhart, Ore., the beach where Lewis and Clark ended their expedition of exploration, go the Pacific Coast Superintendents and Coast TAPPI for a revival of their joint spring meetings on May 21-23.

Martin J. Auchter, manufacturing vice president of Hoberg Paper Mills and vice president of the national superintendents, will be among eastern leaders who will attend.

Bauer Centri-Cleaners, Nichols Vortraps, Lindblad screens, Oliver Ahlfors screens, and flat screens are listed in the program as down for a wide open discussion on pulp cleaning on the final morning, with Fred Sievers, Crown Z, Camas; M. J. Kaphingst, Columbia River Mills; Harlan Clodfelter, Spaulding; Lloyd Heard, Longview Fibre, and a Rayonier man from Port Angeles making reports on equipment and combinations of them.

Ammonia vs. calcium base in the process and evaporation and burning on NH_3 will be discussed the first day by Loran LaFond and Jim Hull from the C-Z mill at Lebanon, Ore., one of the NH_3 pioneers of this industry. L. R. Wood, Rayonier's plant engineer at Hoquiam, will discuss sulfite mill housekeeping. A talk by Mike Paul of C-Z on "how to improve our key people" starts off the sessions. Chlorine dioxide bleaching, papermaking, and black liquor oxidation are on the program. Of course, golf, dances, and a Migratory Peddlers show are on the program, too—and razor clam digging will be, though it's not listed.

ROADS TO GEARHART, ORE. FOR BIG COAST CONVENTION

ALL ROADS IN THE PACIFIC NORTHWEST lead to (1) GEARHART, ORE., for the Joint Supts.-TAPPI Meeting May 21-23. Gearhart Hotel will take care of most of delegates, but overflow will be housed in resort town, (2) SEASIDE, just 3 mi. south. Many will come by way of ASTORIA (3), others by way of TILLAMOOK (4). Shortest route to Gearhart is 78 mi., by way of the new Sunset Highway; by way of Astoria it is 120 mi. from Portland; by way of Tillamook it is 176 mi.

There are many pulp and paper mills in this small area. Shown are: (5) LONGVIEW, Wash. (Weyerhaeuser mills, Longview Fibre, Pacific Paperboard, Long-Bell groundwood mill, Lynch groundwood mill); (6) CAMAS, Wash. (biggest Crown Zellerbach mills center); (7) VERNONIA, Ore. (this is C-Z Tree Farm center and between 7 and 3 is the famous Tillamook Burn); (8) FOREST GROVE (Simpson's Forest Fibre Products Co.); (9) WEST LINN (Crown Z book paper mill); (10) OREGON CITY (Publishers' Paper Co.); (11) NEWBERG (Spaulding Pulp & Paper); (12) SALEM (Oregon Pulp & Paper); (13) VANCOUVER, Wash. (Columbia River Paper Mills); (14) ST. HELENS, Ore. (St. Helens Pulp & Paper Co.). A short distance below Salem is LEBANON (Crown Z Mill), and in PORTLAND are Pacific Roofing Co., Volney Felt Mills, and Crown Z (waxing) and Fibreboard converting plants. Farther south from Salem and Lebanon are Weyerhaeuser's board mill at Springfield, Ore., and Scott's pulp mill at Empire, Ore.

Two of the Men Behind Eastwood Wires

FINAL EXAM

Here James Baney and Clarence Reed are making a final, inch-by-inch examination of a large fourdrinier wire. Though this is a final check, it is only one of many given it at every stage of its manufacture, from the casting of the alloys in our own foundry to the stretching table inspection shown above.

Because the Eastwood-Nealley plant is a *completely integrated* operation, every wire we ship has undergone thorough and continual analysis, control and testing from the raw metals to your finished fourdrinier wire ready for quality paper production.

We are proud to say they are *truly ours* — "from ingots to fourdrinier wire".

EASTWOOD-NEALLEY CORPORATION
Belleville, N. J.

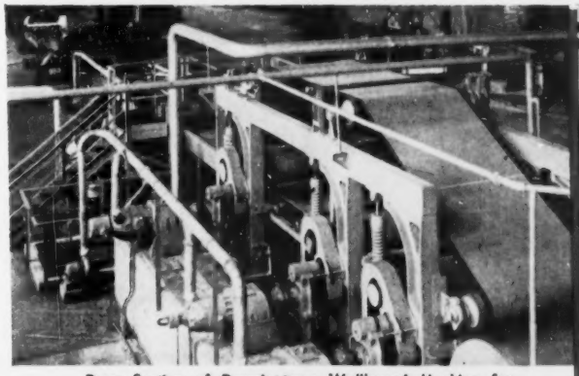
Int. Harvester Hosts APA Chicago Meeting

International Harvester Co. was host at its training school headquarters in Chicago for April meeting of Lake States American Pulpwood Association members, who discussed truck hauling and other problems.

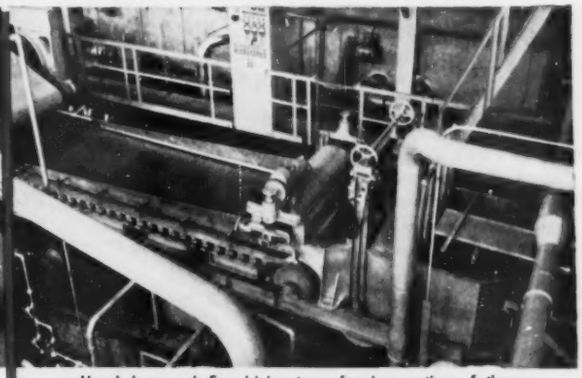
THE KEY THAT ELIMINATES "WASTE" OF BY-PRODUCTS OF LUMBER PRODUCTION

Downingtown Wallboard Machines

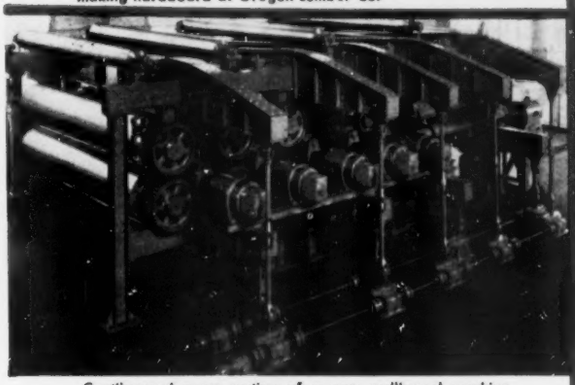
FOR HARDBOARD AND INSULATING BOARD



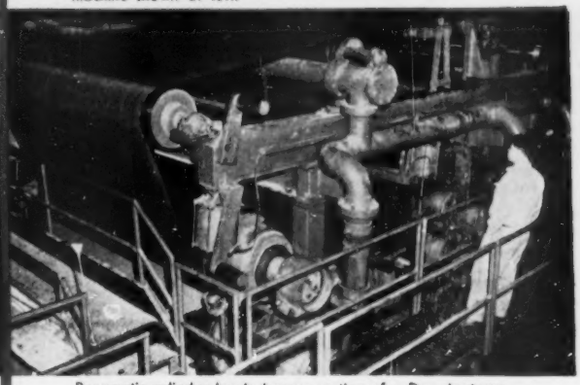
Press Section of Downingtown Wallboard Machine for making hardboard at Oregon Lumber Co.



Head box and Fourdrinier type forming section of the machine shown at left.



Cantilevered press section of a new wallboard machine making either hard or insulating board.



Pneumatic cylinder loaded press section of a Downingtown Wallboard Machine showing two suction press rolls.

A number of new processes have been recently developed which utilize what were formerly "waste" wood products in the production of valuable hardboard and insulating board for the building industry.

An important part of the process is performed by Downingtown Wallboard Machines, consisting of a forming and press section, continuously producing a wet mat to close tolerances.

Be sure to consult a Downingtown Sales Engineer about wallboard production. Or write for Bulletin No. 549.

DOWNINGTOWN MANUFACTURING CO.
DOWNINGTOWN, PA.

West Coast Representative:
John V. Roslund, Pacific Building
Portland 4, Oregon

DOWNINGTOWN

WALLBOARD MACHINES

MODERNIZATION IS PROFITABLE

DESIGNERS AND BUILDERS OF PAPER, BOARD AND FELT MACHINES SINCE 1880

NOW in preparation!

the 1953 WORLD REVIEW NUMBER

As for the past two years, Pulp & Paper's WORLD REVIEW will be a reference work for management and production men on world pulp and paper trends, with statistics and graphs, photographs — country by country, all over the globe, where pulp and paper is produced or consumed in quantity.

A partial list of the contents: Paper . . . Paperboard . . . Pulpwood . . . Newsprint . . . Non-Paper Uses of Cellulose . . . Rayon . . . Plastics . . . Packaging . . . World Trade Trends . . . Directory of Associations . . . featuring the whole world of pulp and paper from Alaska to Chile, from the USSR across Europe.

And this year an entire new feature will be added: A World Pulp Section which will include Directory of Pulp Producers of the World . . . Export and Import Trends . . . Specialization in Pulps . . . Nitrating Pulps . . . Financing and Transportation . . . etc. etc.

Whether your company is a producer or sales agency of woodpulp, or one that serves the great pulp and paper industry with equipment, transportation, special services for financing, it will be good business for you to advertise in the 1953 WORLD REVIEW NUMBER.

LAST FORMS CLOSE
June 1

for further information write

PULP & PAPER
370 Lexington Avenue
New York City 17

INDUSTRY NEWS IN PICTURES

DAVE BRITTAIN PROMOTED TO V.P.—OTHER CHANGES IN MEAD PULP SALES

THESE MEN WERE INVOLVED in recent personnel changes and promotions in Pulp Division of MEAD SALES CO., announced by Vice Pres. R. J. BURKE, New York (l to r):
MORRISON S. HORTON, moved from Chicago to N. Y. C. office at 230 Park on Apr. 20. Has been 4 years with Mead; before that with St. Regis pulp sales, after two year hitch in Navy. Born in Orange, N. J.
DAVID BRITTAIN, promoted to Vice President, and will continue to direct Midwest sales from 20 No. Wacker Dr., Chicago, headquarters. He has been 15 years in Chicago office except for Army service and previously in pulp manufacturing on the Pacific Coast. Born in Pittsburgh.
NELSON MEAD, new member of pulp sales team, takes Mr. Horton's place in Midwest. He has had seven years experience in Northern and Southern mills of the Mead organization, in various divisions. Was four years in the Navy, leaving as lieutenant and carrier pilot. Is one of two sons of Geo. H. Mead, Honorary Chairman of The Mead Corp.
BRUCE E. BROWN, another new member of sales organization, who will work out of New York office. He goes to Mead pulp sales from experience in the pulp and paper industry publication field.

S. D. WARREN CO. ELECTS FOUR NEW VICE PRESIDENTS

FOUR NEW VICE-PRESIDENTS elected by S. D. Warren Co. are: (l to r) EVERETT P. INGALLS, manufacturing; FREDERICK H. FROST, research; WALTER H. WILCOX, sales; and ELLSWORTH GEIST, advertising. The elections closely preceded announcements by the company of its acquisition of Central Paper Co.

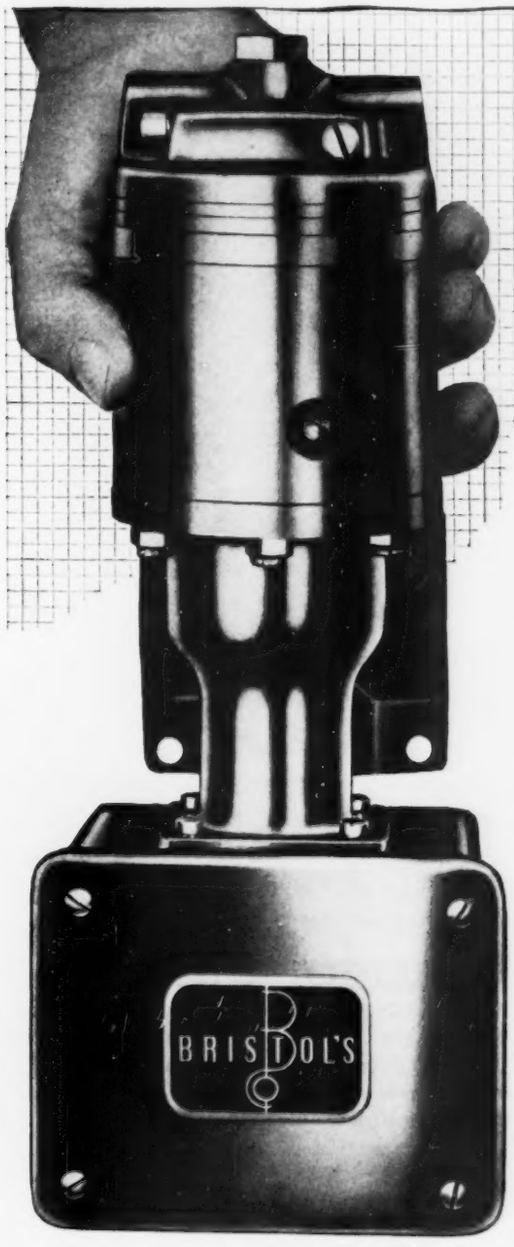
JOIN TWO CELANESE ORGANIZATIONS

ALLAN T. PATTON (left), formerly with Mead Sales Co., New York, in pulp sales, has been appointed Director of Pulp Sales for Canadian Chemical & Cellulose Co., Ltd. He was with Mead from 1945 and with Fraser Companies before World War II.
CHARLES B. DUNHAM (right), formerly with MacMillan & Bloedel, has joined Columbia Cellulose Co., and Celgar Development Co., subsidiaries of Celanese Corp. of America in British Columbia directing organization of wood supply for Prince Rupert pulp mill and Castegar proposed mills. Rae Johnson continues as Woods Mgr. and Axel Brandstrom heads up forestry planning for Celgar.

IN INDUSTRY NEWS

ROBERT E. COLLINS (left), who has joined SPROUT, WALDRON & CO., Inc. refiner manufacturers, as Process Service and Sales Engineer. Graduate of Syracuse in Pulp and Paper, he was Semi-Chem. Plant Supt. at Mechanicsville, N. Y., Mill of West Va. Pulp & Paper Co. A Major in Air Reserve, he served 5 yrs. as Air Transport Command Pilot.
JOE N. DREW (right), who has recently become Electrical Engineer at Crossett Paper Mills, Crossett, Ark., succeeding Johnnie Osborne, who went to the new Bowater Southern Corp. Mr. Drew graduated from U. of Arkansas and was an electrical equipment manufacturer's application engineer at Pine Bluff, Ark.

WHAT'S NEW AT BRISTOL . . . . WHAT'S NEW AT BRISTOL



New Bristol Series 650 PNEUMATIC TRANSMITTERS

for use with

BRISTOL MINIATURE RECORDERS, INDICATORS, AND CONTROLLERS

. . . give you these new advantages

● **THEY USE BRISTOL WORLD-FAMOUS MEASURING ELEMENTS—the measuring elements with wide-angle travel for positive action.** These are the same standard Bristol measuring elements that are used in Bristol Recording and Controlling Instruments. They are the result of over 60 years of experience in instrument making and application in practically every industry. Bristol measuring elements are recognized the world over for their accuracy, simplicity, and reliability. There are no better measuring elements made than Bristol measuring elements.

● **TRANSMITTING UNITS PROVEN TO BE ABSOLUTELY RELIABLE AND TROUBLE-FREE. They are very sensitive** to extremely small changes in the measured quantity, as little as 0.03% of range, including reversal. Superior control results from the use of a booster valve with output capacity of 3.0 scfm.

● **SIMPLE TRANSMITTING MECHANISM—frictionless operation**—only one pivot and no flexures—will operate in any position—is weatherproof and can be installed in any location, pipe-saddle or surface mounting.

● **AVAILABLE IN A WIDE SELECTION OF RANGES:** Pressure (0 to 5" water to 0-10,000 psi), vacuum (0 to 5" water to full vacuum), temperature (−100° F. to 1000° F.), liquid level (0 to 5" water and up), flow (mercury manometer, bell type, and Barton meter bodies), and differential pressure (0 to 2.0" water to 0-500" water). Suppressed ranges available. Over-range is standard, up to 500% for some ranges. Write for free bulletin No. A105. The Bristol Company, 142 Bristol Rd., Waterbury 20, Connecticut. 6.3.8.

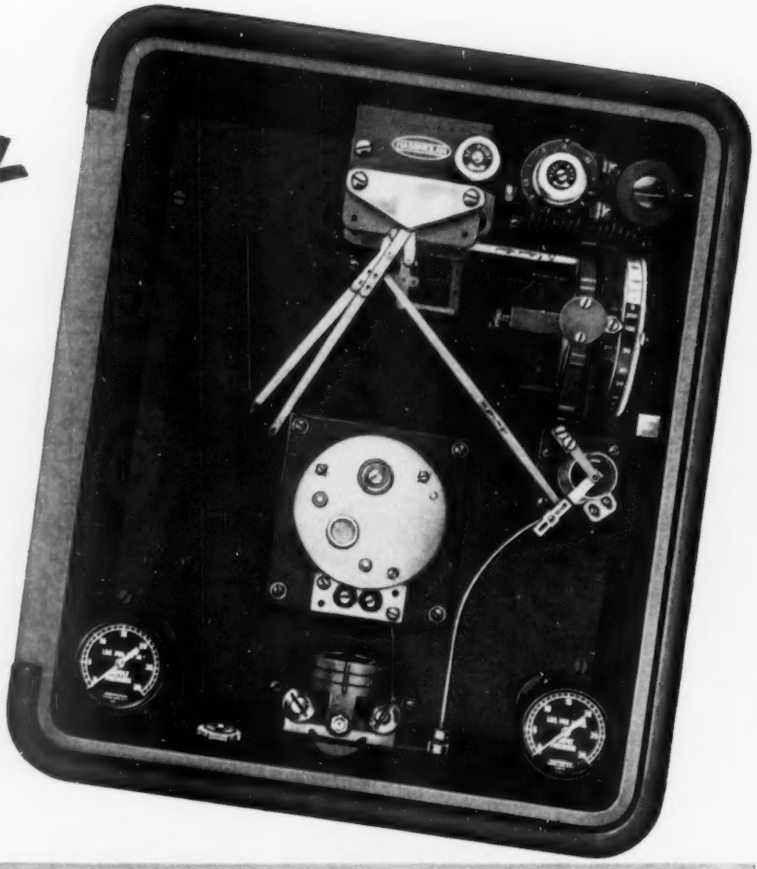
LOOK FOR OUTSTANDING NEW DEVELOPMENTS FROM BRISTOL

BRISTOL

THE DEPENDABLE GUIDEPOST OF INDUSTRY

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

See it Work in your plant



Masoneilan 60000 Series Controller

Ask a Mason-Neilan engineer to bring a demonstrator model into your own office or plant — and see the difference. Note these outstanding qualities . . .

GIMBAL UNIT

See how *ONE CONTROL MECHANISM* gives you *FOUR COMBINATIONS* of primary and feedback motion to obtain Direct or Reverse Proportional (includes On-Off), or Differential Gap control.

SIMPLE ADJUSTMENT

Make only ONE SETTING — without removing chart — to select type of control, direction of action, and percent proportional band or differential-gap. See how easy to adjust, test and service, too, because all unit assemblies are directly accessible, easily detached, interchanged. Note how all air passages are manifolded.

STUBBORNLY DEPENDABLE

Accurate, stable performance, plus unequaled simplicity, versatility and reliability make the Masoneilan 60000 Series Pneumatic Controller the *Instrument Man's Instrument* for pressure, temperature, liquid level or flow control.

(Call in a Mason-Neilan engineer at your earliest opportunity)

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REGULATOR CO.
1181 ADAMS STREET, BOSTON 24, MASS., U.S.A.

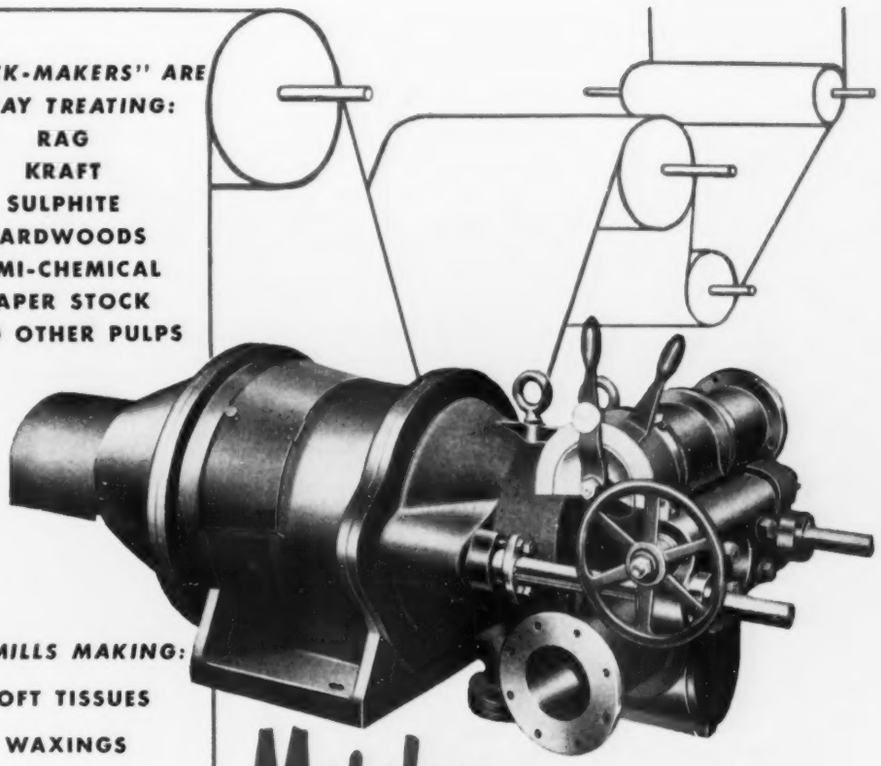
A HIGH Quality Coefficient PRODUCT

Sales Offices or Distributors in the Following Cities:

New York • Syracuse • Chicago • St. Louis • Tulsa • Philadelphia • Houston • Pittsburgh • Birmingham • Atlanta • Cleveland Cincinnati • Detroit • San Francisco • Salt Lake City • El Paso • Boise • Albuquerque • Charlotte • Los Angeles • Denver Appleton • Corpus Christi • New Orleans • Louisville • Mason-Neilan Regulator Co., Ltd., Montreal and Toronto

"STOCK-MAKERS" ARE TODAY TREATING:

RAG
KRAFT
SULPHITE
HARDWOODS
SEMI-CHEMICAL
PAPER STOCK
AND OTHER PULPS



IN MILLS MAKING:

SOFT TISSUES
WAXINGS
BOOK
BONDS
BOARDS
WRITINGS
WRAPPINGS
BAG
COATED
CARBONIZING
GLASSINE
AND OTHER GRADES

Morden "STOCK-MAKER" BEATS THEM ALL CONTINUOUSLY...

Direct from chest to chest or from chest to paper machine without batching or cycling.

The "Stock-Maker" gives the utmost efficiency in beating treatment — at one-half the power, in one-third the space, with none of the labor required by the ordinary conventional roll type beater.

The 700 "Stock-Maker" installations in 180 paper mills in 23 countries throughout the world prove that—

For quality and economy, it will pay you well to Mordenize your beating with "Stock-Makers".

MORDEN
STOCK PREPARATION EQUIPMENT
MACHINES COMPANY

For complete information write
MORDEN MACHINES COMPANY
Corbett Building, Portland, Oregon

Personals

PACIFIC COAST NOTES

IRWIN THIEME, technical director of Scott's Soundview Pulp Division, is new chairman of TAPPI's pulp testing committee.

LESLIE L. LARSON, Ph.D. from the Institute of Paper Chemistry and technical director at Detroit Sulphite Pulp & Paper Co., Detroit, has gone to the Pulp and Paper Division, Potlatch Forests Inc., Lewiston, Idaho, to fill a similar post. He is a native of Idaho and graduate of the University of Idaho, so the move is "back home" for him.

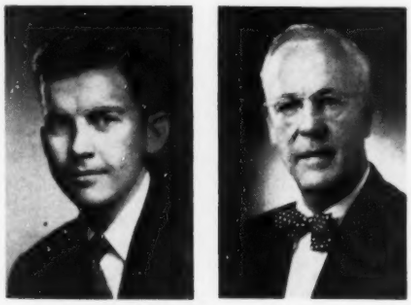
RUSSELL M. HEATH, former general manager of the Marinette, Wis., mill of Scott's, has been named manager of pulp sales for the Soundview Division but will make headquarters in Chester, Pa., and not Everett. He succeeds *MIKE BUCKLEY*, of Everett, new exec. v.p. of East Texas Pulp & Paper Co.

DON SHIRLEY and *JAMES T. GOW* of Esco, recently made a trip into Texas and Jim went on to visit chemical plants in Mississippi and Louisiana.

DR. PAUL SCHLOSSER, research manager of Rayonier Inc., and in research work at the Shelton, Wash., labs for most of the time since 1935, died March 12. He was 59 and his health had been poor in recent years. He studied at the Darmstadt Institute in Germany before migrating to this country.

HARRY W. BRYSON, Jr., 1942 graduate of Wash. State, and with Hooker since 1950, has been appointed sales service representative for the Pacific Northwest, British Columbia and Alaska, according to *T. E. MOFFITT*, western manager, Tacoma.

ROBERT L. SIMMONS, Spokane native, and U. of Washington graduate, has been appointed sales supervisor for Westinghouse in Seattle for Pacific Northwest and Alaska customers.



JAMES S. THORNTON (left) and JOHN V. ROSLUND (right), now associated on Pacific Coast, with headquarters in Portland, Ore.

James S. Thornton Joins Roslund on the West Coast

James S. Thornton, formerly sales engineer and assistant chief engineer for Downingtown Manufacturing Co., has joined John V. Roslund on the West Coast at Portland, Ore. Mr. Thornton, a graduate of the Massachusetts Institute of Technology, comes from a family long connected with the paper industry. Mr. Thornton will be in charge of the machinery accounts of the Roslund agency.

The Frank W. Egan Co., Bound Brook, N. J., manufactures paper converting machinery, air drying systems, and plastic film equipment. The extruding and laminating of plastic film to paper, and resin impregnating of paper are examples of two expanding fields where Mr. Thornton will be able to give assistance.

The Downingtown Manufacturing Co., Downingtown, Pa., builds pulp and paper making machinery. In addition, a good number of their hardboard and insulating board machines are installed on the West Coast.

PACIFIC COAST REPRESENTATIVES

MILTON J. MAGUIRE (left), who retired Jan. 1 as West Coast Mgr. for PMC Dept., Hercules Powder, has entered business in Portland, Ore., as a Sales Agent. He is handling BRANDON-DRYER FELTS and is making further arrangements to be announced later. He and his wife, Grace, recently made a 10 weeks automobile tour of the country.

JOHN W. BROWN (right), appointed Manager of new Mason-Neilan Regulator Co. district for Washington-Oregon sales and service with offices in Dexter-Horton Bldg., Seattle. Graduate of Grove City College, Grove City, Pa., he joined M-N in 1945 from Standard Oil of Ohio and has been sales engineer in Boston, Pittsburgh and Los Angeles.

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TRONA CHEMICALS INCLUDE:

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THREE ELEPHANT* BRAND
Borax
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†Trade Mark American Potash & Chemical Corporation

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MAKES THE WORLD GO 'ROUND

On our constantly revolving earth the wheels of progress grind ahead to new and wonderful developments for better living. Few men realize or stop to enumerate the countless invisible uses in industry for Trona Chemicals. Homes, clothing, food, automobiles, yes, even television sets are better because of minerals drawn from a dry lake created during the glacial age, in what is now California. Regardless of where they may live or what they may do, Trona Chemicals play a part in the life of every individual in these United States.

PROVED CHEMICALS FOR INDUSTRY AND AGRICULTURE

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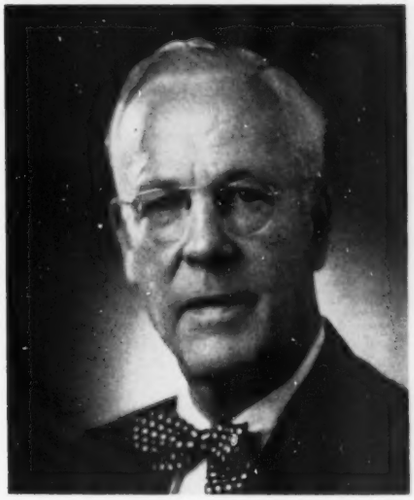
• 122 East 42nd Street, New York 17, New York
Plants • Trona and Los Angeles

ASTEN DRYER FELTS

Egan

MANUFACTURERS OF PAPER CONVERTING MACHINERY • PLASTIC FILM MACHINERY • AIR DRYING SYSTEMS



John V. Roslund

James S. Thornton

Oriskany

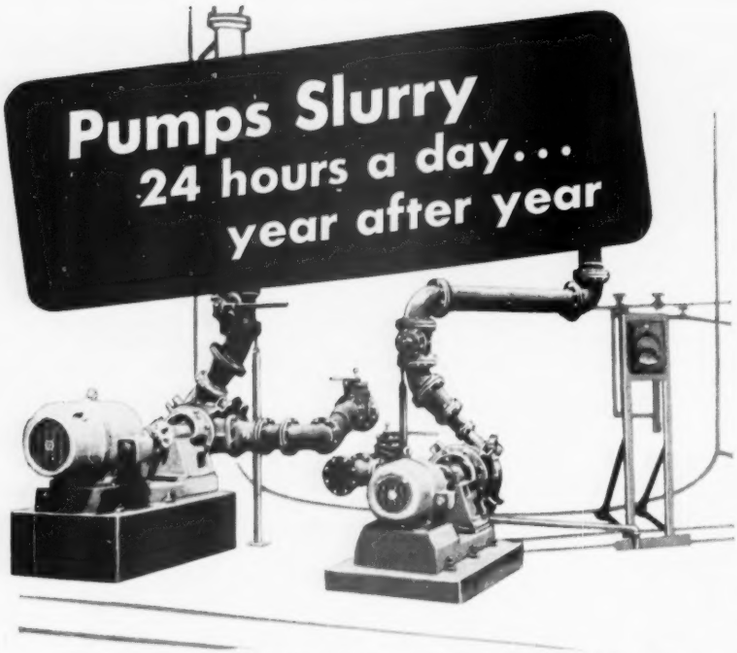
ORISKANY-WATERBURY FELTS

DOWNINGTOWN PAPER MACHINERY

JOHN V. ROSLUND

244 PACIFIC BUILDING • PORTLAND 4, OREGON

CAPITOL 6161



● MORRIS TYPE R SLURRY PUMP at the left is on continuous 24-hr. duty delivering 1000 GPM of a 170° lime slurry at 100' head. Fifty-HP motor operates at 1180 RPM. Intermittent-duty pump at right delivers 200 GPM at 50' head with 7½-HP motor turning at 880 RPM.

In slurry-handling operations, "long-term service" is a meaningless claim unless the pump will work day-in and day-out with a minimum of maintenance time, trouble and expense

Morris Type R Slurry Pumps—with an established reputation for longer life—also incorporate in their design exclusive features which result in easier installation . . . fewer interruptions to service...less overhaul...fewer replacements.

To provide uninterrupted service . . .

The gland is under suction pressure only. This reduces leakage and dilution . . . keeps harsh abrasives out of the stuffing box . . . practically eliminates packing troubles.

There are no internal studs or bolts. Caustic and corrosive solutions cannot seep past threads and cause maintenance headaches.

To make installation and dismantling easy . . .

Shell is interchangeable for right or left hand rotation. Suction and discharge nozzles can be rotated around the axis of the pump to a total of 72 different locations.

Impeller removed without disturbing the piping. You simply loosen 4 *outside* clamping bolts and pull off the end cover. This feature alone saves considerable time and labor.

● Free Service. Morris Engineers will be glad to recommend the pump best suited to your needs for size, capacity, etc. Send necessary data today . . . include request for Bulletin 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

MORRIS *Centrifugal Pumps*

Personals

NORTHEAST NOTES

GEORGE E. PAINE, chairman of the board of New York and Pennsylvania Co., and for many years prominent in the pulp and paper industry, died at his home in New York City in April. He is survived by his wife, and his sons—Augustus G. Paine and George Eustis Paine, Jr.

DOWNING P. BROWN, vice president in charge of sales of Brown Co., has announced several changes in sales staff for his company. *RAYMOND E. LAPLANTE* will be southwest district representative for the Bermico Sales Division and will represent the Pulp Division in sale of Solka-Floc; *NICHOLAS C. NELSON* will be manager of the Foreign Sales Division; *W. T. LAROSE* will head the newly-formed Towel and Tissue Sales Division; *N. O. ROBINSON* has been promoted to eastern regional manager; and *J. E. MULLANEY, JR.*, is the new western regional manager.

ALEX J. PAGEL, president of Pagel, Horton & Co., New York, has been elected again to the presidency of the Swedish Chamber of Commerce of U.S.A.

SOUTHERN NOTES

GEORGE HARDAKER, Asheville, N.C., has been named industrial affiliate for the Southeast Superintendents Division according to the chairman, *V. K. SHANON*, The Mead Corp., Sylva, N. C.

ROBERT GILMORE, general safety director, Rayonier, was a visitor at the Fernandina, Fla., mill and talked at the recent Southern safety conference in Atlanta.

ROBERT JOHNSON, JR., president of General Paper Stock Co., St. Louis, long prominent in waste paper field, died suddenly in March. He was 66.

DAVID B. EDEN, JR., is new manager for SKF Industries in Charlotte, N.C., district.

CANADIAN NOTES

R. H. "BUCK" RICHMOND, plant manager at Port Alice, Vancouver Island, for Alaska Pine & Cellulose, was the hero of a battle with a cougar recently near the mill town. His companion on a tramp through the woods was suddenly attacked by a cougar and by the time Richmond was able to go to his aid the big cat had severely mauled the man. Armed with a small hatchet, Mr. Richmond was able to beat off the cougar and finally kill it.

H. K. COLLINGE, former general manager of Canada Paper Co., has resigned from that office to become a consultant in chemical engineering at Montreal. English-born, Mr. Collinge started with the Howard Smith subsidiary soon after World War II as a research chemist.

E. S. BARTON, British Columbia-trained

45 Installations
PROVE INDUSTRY CONFIDENCE

These 10 x 11 x 175 rotary lime sludge kilns are building profits at the Macon Kraft Co., Macon, Georgia.

EVER SINCE LIME SLUDGE RECOVERY became an important profit factor in the sulphate paper industry, the Allis-Chalmers kiln has been the choice of American and Canadian pulp mills. This industry-wide preference for the Allis-Chalmers lime sludge kiln is the result of the many engineering and construction features that provide the continuous, long-term, low-cost performance essential to profitable operation.

With the Allis-Chalmers kiln, fuel savings of as much as 30% and a 10% capacity increase are made possible by the Allis-Chalmers patented heat recuperating system . . . a chain-hanger-spiral arrangement in the feed end of the kiln. This system effectively extracts heat from gases . . . gives low exhaust temperatures . . . increases heat transfer surface . . . cuts dust loss.

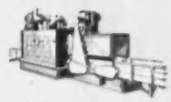
Other preference-establishing features of the A-C kiln include a carefully calculated diameter-length ratio which minimizes costly "ringing"; the improved 20 degree involute spur gear which distributes driving force equally; true circle shell construction insuring a better refractory lining fit and longer refractory life; floating type riding rings for adequate support and proper weight distribution.

Get all the facts. Write for Bulletin 07R7010, Allis-Chalmers, Milwaukee 1, Wisconsin. A-4007

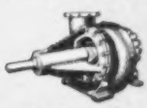
Texrope, Hi-Density and Streambarker are Allis-Chalmers trademarks.

OTHER A-C PAPER MAKING EQUIPMENT

Motors


Streambarker

Texrope V-Belt Drives


Centrifugal Pumps

Hi-Density Feeder

Vibrating Screens

ALLIS-CHALMERS

NASH ENGINEERING COMPANY
422 WILSON AVE., SO. NORWALK, CONN

engineer, has gone to New Zealand to be resident engineer for Sandwell & Co., consulting engineers for the Tasman Pulp & Paper Co. project at Murupara.

W. BEVERLY SCOTT has been appointed by *RICHARD COLLINS*, vice president in charge of manufacturing, Consolidated Paper Corp., Grand'-Mere, Que., as assistant. Mr. Scott had been division manager of the Laurentide division of the company at Grand'-Mere for several years. Replacing him at Laurentide division as acting manager is *FREDERICK T. BRADSHAW*, who has been chief engineer of the corporation for the past ten years. *EDWARD T. BUCHANAN* who was awarded the I. H. Weldon medal in 1948, is the new acting chief engineer.

MIDDLE WEST NOTES

JAMES O. MULLIN, son of *JOHN L. MULLIN*, vice pres. and gen. mgr. of Hopper Paper Co., Taylorville, Ill., was married Mar. 22 in Taylorville to Miss Elizabeth Blakeley, daughter of *EVERETT BLAKELEY*, beater engineer at the Hopper Mill. Jim Mullin took some of the photographs in the Hopper Mill feature article in Mar. 1953 PULP & PAPER.

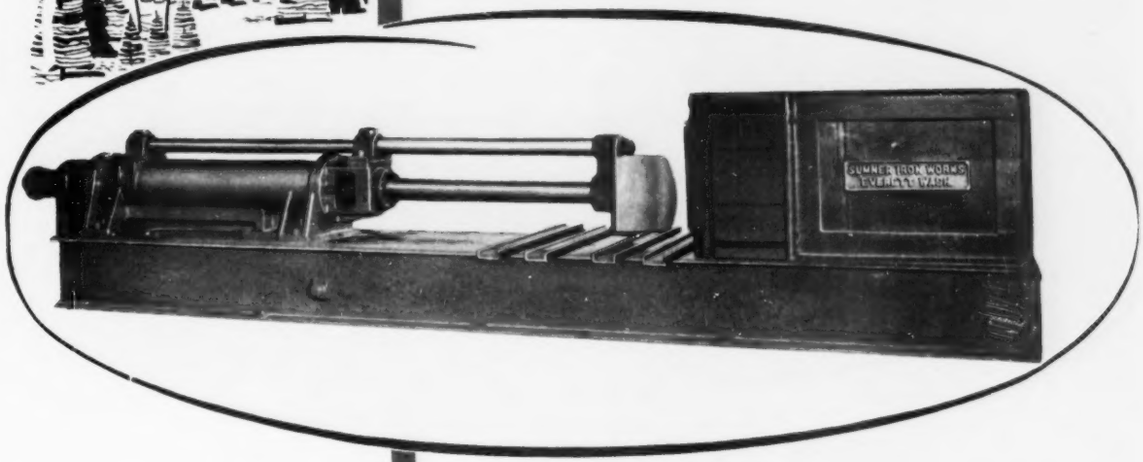
ERNEST E. LUDWIG, vice pres. of Bermingham-Prosser Co., Kalamazoo, is the new chairman of the advisory committee for the paper technology curriculum at Western Michigan College.

WILLIAM KOLB, executive vice pres. and gen. mgr., Valley Iron Works, Appleton, presented radios to William Nowell and Charles Joecks who recently retired. Mr. Nowell had 34 years and Mr. Joecks 36 years with Valley Iron.

GERALD McLAUGHLIN, an employe at the Badger Globe mill of the Kimberly Clark Corp., Neenah, made headlines the other day. He became the father of triplets—all girls.

HAROLD R. ALLEY, who has been engaged as Technical Director for new Testing and Research Dept., Mid-West Wax Paper Co., Fort Madison, Iowa. He also will assist in technical sales. Mr. Alley, one of the founders of Chicago TAPPI section, was recently in Japan for a year as Army Industrial Engineer, and in past ten years has assisted in developing special paper products. Since his return to the U.S., he has been Project Engineer with Transparent Package Co.

THE AXE *with the* BUNYAN PUNCH!



SUMNER'S *steam* AXE SPLITTER

For rapid breakdown of your logs to a size suitable for chipping or grinding, the SUMNER Steam-Axe-Splitter operates with a force and competence Paul Bunyan might well have envied.

The Splitter customarily is built with a 54" stroke for 48" long wood, but can be constructed to accommodate greater or lesser log lengths. The business end of the Splitter is a heavy single-bit cast steel axe with guide rods and two babbitted guide bearings.

The anvil is of heavy cast steel, cushioned against a wood bulkhead set against a sand-filled box. The entire assembly is mounted on a heavy structural steel frame, making the unit self-contained.

As with all SUMNER equipment, the Steam Splitter incorporates simplicity and sturdiness with proven operating reliability. We invite you to send for details on our complete line of pulp, paper and board mill machinery.

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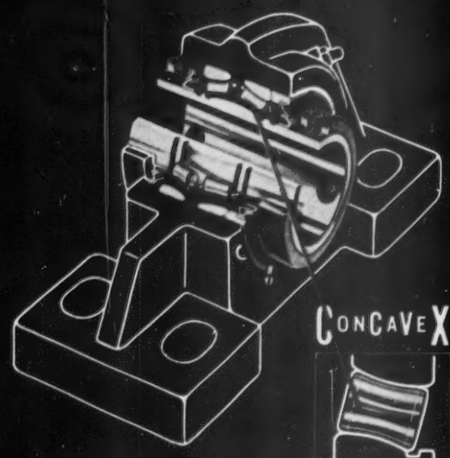
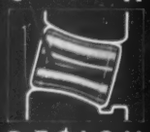
THE First
AND STILL THE FINEST
BEARING OF ITS KIND



CONCAVEX



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Originated by Shafer over 3 decades ago, ConCaVex is still the "years ahead" design in roller type bearings. It has met all challenges—shown all industry what the words "anti-friction-efficiency" really means. This basically superior ConCaVex design combines in one bearing the distinct structural and operational advantages of both ball and roller type bearings. Installed in your product or your plant equipment Shafer ConCaVex Bearings will improve your ability to produce a quality product more efficiently at less cost. Ask for full information and engineering assistance. No obligation.

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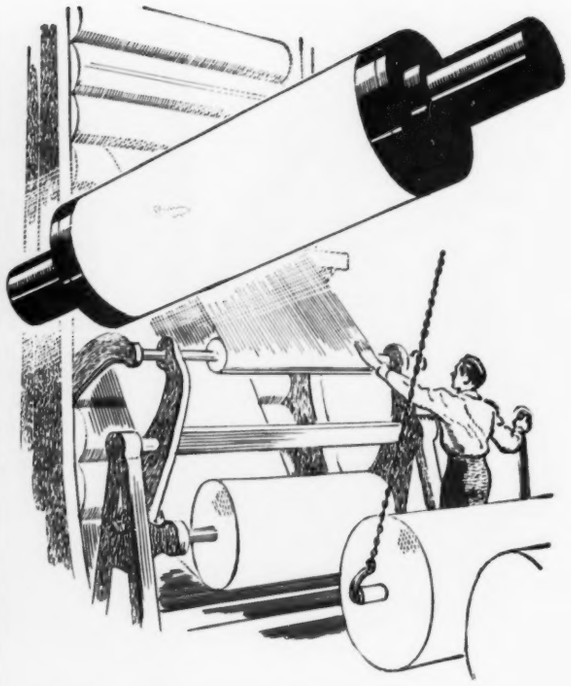

Profit-maker for your Mill

As the paper comes from the Calender stacks, you can notice the difference good calendering makes. Here at the stacks is your last opportunity to give your paper a competitive advantage.

If you are selling against the smooth, uniform surfaces produced by Butterworth Calender Rolls, why not use these long-life rolls yourself? Made to specification and tested for hardness, smoothness and density before delivery. Locked on the shaft under terrific pressure, they cannot slip. Will not come loose. Heads and shafts are of forged steel. Taper wedges are used.

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Size
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For use on BALL BEARINGS
Simonds method-manufacturing from forgings. Creates dense grain structure at cutting edge without directional properties, which tests prove to be the most desirable structure for slitters operating against hardened steel rolls.
Conventional method manufacturing from bar stock. Grain structure follows direction of rolling, creating a uniform but undesirable structure at cutting edge for slitters operating against hardened steel rolls.
FORGED SLITTERS

STURDY NEW DESIGN BOX HOLDS FIVE SLITTERS

Here's Why SIMONDS SLITTERS Cut Longer . . . they're FORGED!

This new package tells the "inside story" of the unmatched performance of Simonds Forged Slitters on every score-cutting job. Simonds Special Steel (forged for added toughness) plus controlled hardening and grinding to exact specifications, add up to longer runs, with fewer sharpenings and longer cutting life from every Slitter. So, for lowest slitting cost, see your Simonds Distributor about "Red Streak" Forged Slitters . . . available from stock in all standard sizes.

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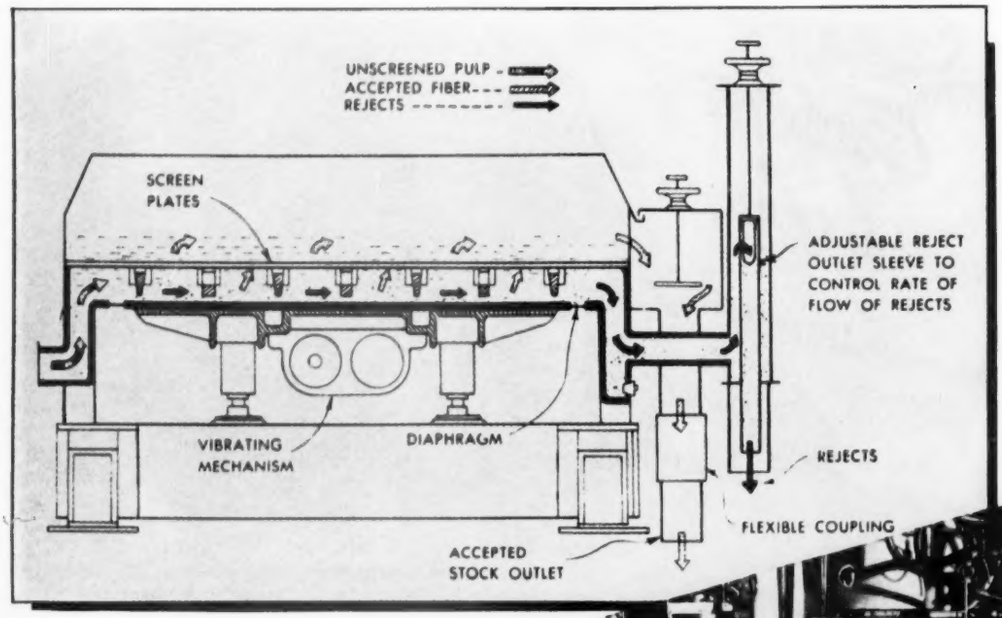
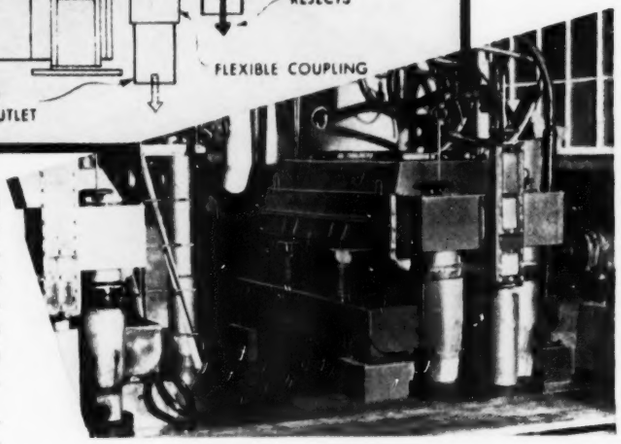
OLIVER-AHLFORS *UPFLOW* Pulp Screen

Shives, Dirt and Other Rejects Are Licked Before They Get Started





Study this diagramatic sketch. Note how unwanted solids in the pulp—many being denser and heavier—fall away from the wanted fibers in the pre-screening compartment. They're licked before they ever get started. Most don't even reach the screening surface. Certainly they don't tend to force their way through the slotted openings along with good fibers as they do with down flow screens.

This is the distinctive advantage of the Oliver-Ahlfors Pulp Screen! Other advantages include:

1. **Entire screen surface constantly operating at full capacity;**
2. **Requires approximately one half of floor space compared to conventional flat screens;**
3. **Continuous automatic screen plate cleaning, *minimizes operator attention;***
4. **Screens at high density reducing required *decker capacity.***

As for its application: The Oliver-Ahlfors Screen is recommended as a primary and secondary screen on all bleached or unbleached chemical pulp. Let us know when it will be convenient and we'll have one of our experienced pulp and paper engineers call to discuss your requirements and to tell you about the screens operating in this country as well as in many mills in Europe.

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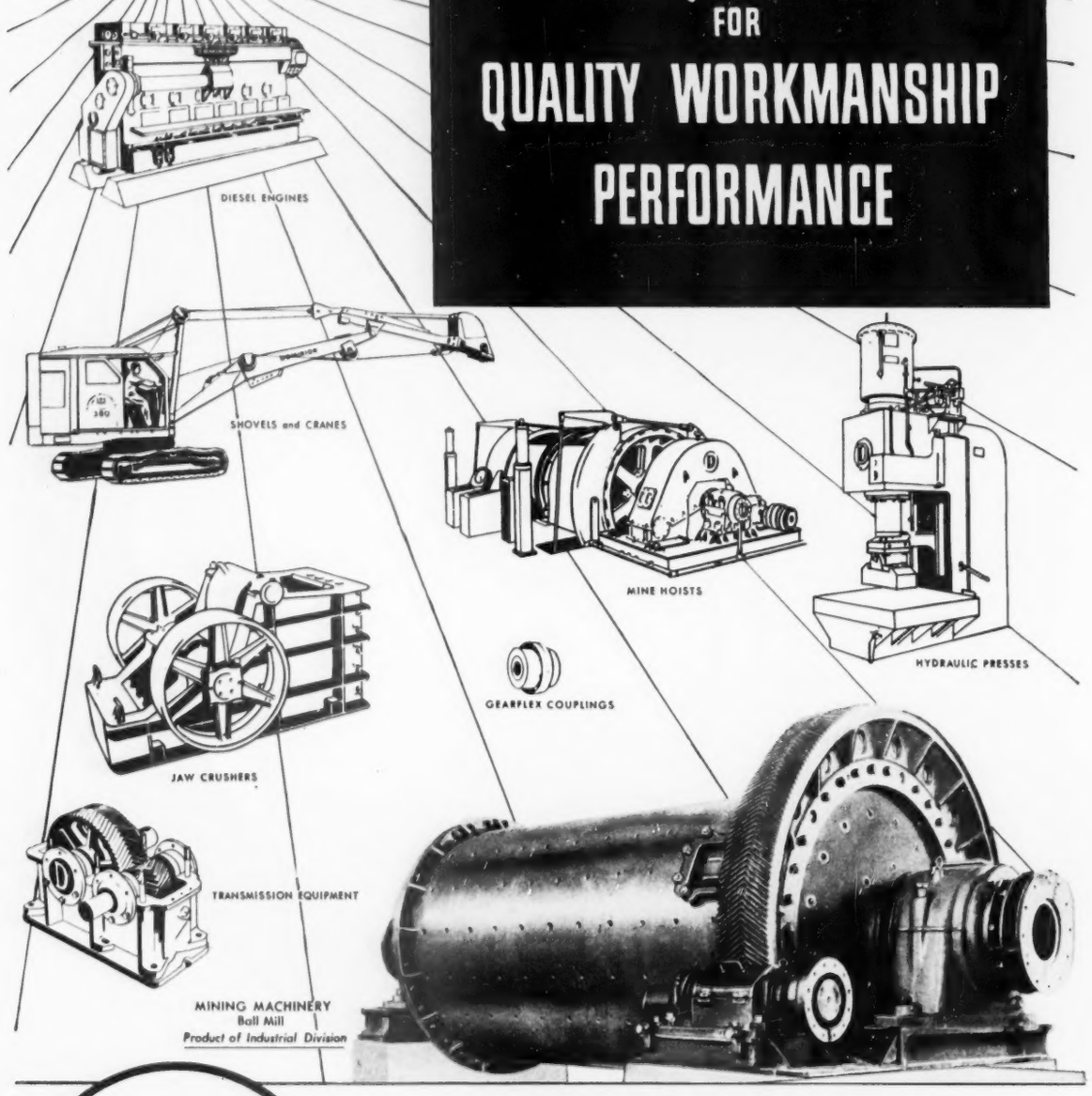

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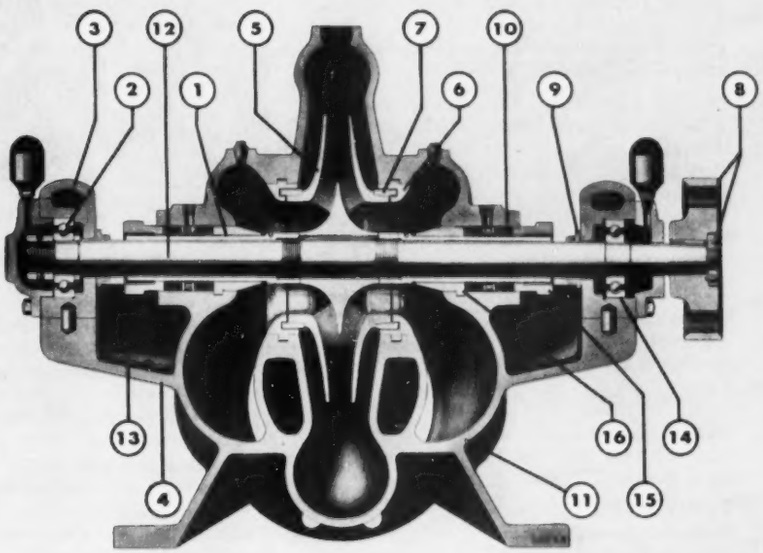
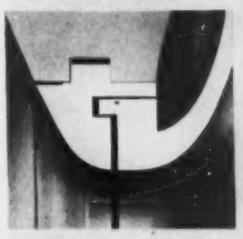
DE LAVAL
SINGLE STAGE CENTRIFUGAL PUMPS

for dependable industrial service



Labyrinth wearing rings minimize leakage...maintain high efficiencies



Labyrinth rings used in these De Laval pumps retard flow of water through labyrinth passage.

Flat rings showing relatively unimpeded flow of water.

(1) **Shaft Sleeves** are screwed on, to abut the impeller and make a water-tight joint. Sleeve expands freely and independently of shaft when temperatures change. There is no tendency to buckle.

(2) **Thrust Bearing** locates rotor axially.

(3) **Bearing Caps** easily removable for maintenance.

(4) **Bearing Brackets** scraped to lining bars for perfect alignment.

(5) **Impeller** hydraulically balanced, finished on all surfaces.

(6) **Labyrinth Wearing Rings** held accurately in machined grooves in both case and cover.

(7) **Impeller Wearing Rings** threaded on impeller, opposite to rotation.

(8) **Flexible Coupling** ground on all exposed surfaces and statically balanced, complete coupling supplied, pump half mounted on taper so that it can be easily removed. Check nut locks coupling on taper.

(9) **Deflector** keeps water out of bearing.

(10) **Stuffing Boxes** extra deep; lantern rings for water sealing.

(11) **Pump Case** horizontally split; machined to limit gages.

(12) **Steel Shaft** ground to limit gages.

(13) **Drip Boxes** large; provided with drain openings.

(14) **Radial Bearing** free to move axially, thus avoiding temperature strains.

(15) **Glands** split horizontally.

(16) **Protecting Bushings** renewable.

You can count on the performance of the De Laval Single Stage Centrifugal Pumps because they are precision-made to high manufacturing standards and incorporate the many quality design features shown in the cross-section.

They operate at high or low speeds, at high or low heads...with maximum efficiency.

For example, De Laval G, I and K Single Stage Double Suction Pumps have a capacity range of 175 gpm to 6,000 gpm, and heads to 300 feet. They are available in sizes ranging from 4" suction and 3" discharge to 14" suction and 12" discharge. Write for Bulletin 1002.

DeLaval also furnishes larger centrifugals for capacities up to 70,000 gpm. Bulletin 83-29R sent on request.

DE LAVAL *Centrifugal Pumps*

DE LAVAL STEAM TURBINE COMPANY

813 Nottingham Way, Trenton 2, New Jersey

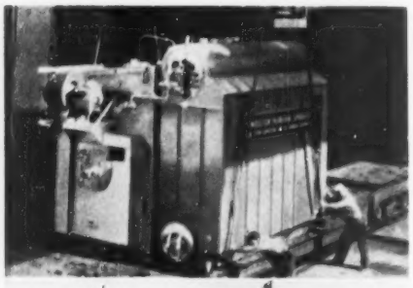
BL 188

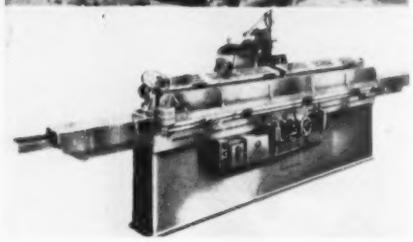
News and Notes from ▣ ▣ ▣

EQUIPMENT AND SUPPLY COMPANIES

C. E. PACKAGE BOILER

Top—COMBUSTION ENGINEERING INC., 210 Madison Ave., New York 16, N. Y., offers this new standardized shop-assembled water tube C-E PACKAGE BOILER Type VP. It is a compact reliable unit in medium pressure range, up to 250 psig, and 4,000 to 30,000 pph capacities.





HANCHETT'S NEW KNIFE GRINDER

Below—HANCHETT MFG. CO., Big Rapids, Mich., and Portland, Ore., announces this new Model "DN" low priced precision Knife Grinder with new automatic table drive transmission. Has latest Timing Belt Drive. In 30 to 108 in. knife capacities.

RAYBESTOS-MANHATTAN, INC., has moved from 445 Lake Shore Dr. into its newly constructed Chicago office and warehouse building at 6010 Northwest Highway.

SPENCER CHEMICAL CO., Kansas City, Mo., has announced plans for construction of a plant to produce approximately 45 million pounds per year of polyethylene. This new plant will be located near Orange, Texas, where the company has already acquired a 400-acre site.

BLACK-CLAWSON CO., announces that *BARRIE DIXON* has joined its staff as deputy managing director of B-C International, Ltd., B-C subsidiary in London. In this capacity Mr. Dixon will direct the activities of B-C International, Ltd., in its fields of operation. He held the position of chief enginneer at Walmsley's Ltd.

KOPPERS CO., INC., has announced the appointment of *DONALD L. DeVRIES* as manager of the precipitator dept., Metal Products Div. Mr. DeVries, a native of Sykesville, Md., received his early education at Baltimore Polytechnic Institute and later was awarded a Bachelor of Science Degree in industrial engineering from Lehigh University.

THE BRISTOL CO., Waterbury, Conn., has announced expansion of its engineering and production facilities for printing recorder charts for instrument companies. Circular charts up to 18 in. in dia. and strip charts up to 29⅝ in. wide can now be produced to the instrument company's specs for all types of special instruments, research instruments, computors, etc.

ALLIS-CHALMERS MFG. CO., has released a new bulletin containing tips on selecting the right starter for squirrel-cage induction motors rated up to 600 hp at 600 volts or less. Copies of this A-C selection guide for general purpose starters, 14B7733, are available from Allis-Chalmers Mfg. Co., 995 S. 70th St., Milwaukee, Wis. A-C also releases a motor and generator reference booklet to assist in the selection of motive power to handle most industrial applications. Copies of "Allis-Chalmers Motor and Generator Reference Book," 51R7933, are available on request.

NATIONAL ALUMINATE CORP., of Chicago, recently announced the promotion of *H. R. POWERS, DR. DAVID G. BRAITHWAITE* and *GAGE AVERILL* each to the post of asst. vice pres. National Aluminate is the manufacturer of Nalco water treatment chemicals, petroleum catalysts, fuel oil treatments, and paper process chemicals.

STEBBINS ENG. & MFG. CO., Watertown, N.Y., has expanded field and shop service for the installation of Saran Rubber and Tygon linings throughout the United States and Canada. The company is now licensed applicators for both of these materials.

EXTRA! EXTRA!

NEW EXTRA WIDE EXPANDER ROLL HANDLES PAPER UP TO 246" WIDE ! !

Mount Hope

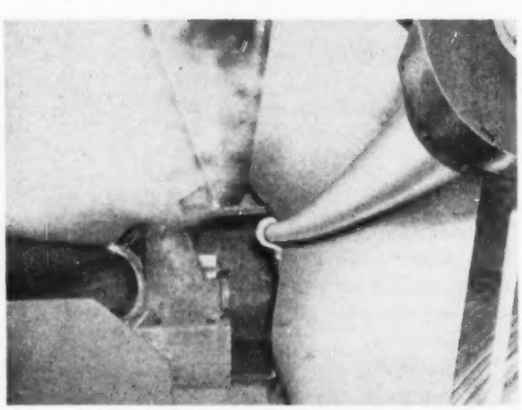
7" OD FREE WHEELING EXPANDER

The addition of the 7" OD to Mount Hope's line of Expanders fulfills the requirements of the paper industry for continuous, trouble-free production.

1. Eliminates wrinkles and creases.
2. Maintains maximum width of paper.
3. Assures continuous operation—the free turning roll prevents paper spoilage—does away with costly waste and stops.

The Mount Hope 7" OD Expander is the largest and the widest Expander now in use. The Neoprene-covered rolls, supported by steel ball bearings spaced along the entire face, account for its extremely free turning properties—assuring maximum capacity and long service.

Mount Hope Expander Rolls range from 1½" to 7" in diameter, and are successfully handling paper, textiles and plastics from 4" to 246" wide.



This 7" OD Expander has a 240" width of face with a 281⅝ overall, 4⅜ diam. axle and is installed following a size press at the Champion Paper Co., Canton, N. C.

Write now for Bulletin EPW or a Mount Hope Engineer will be glad to advise on your particular requirements. No obligation.

MOUNT HOPE MACHINERY COMPANY, 15 FIFTH STREET, TAUNTON, MASS.

MOUNT HOPE FREE WHEELING EXPANDER

D. D. CARR-HARRIS, Assistant to Pres. of Sutherland Refiner Corp., also will travel for equipment start-ups. Was Celanese Plant Engineer.

Don Carr-Harris Aid to Manson Sutherland

D. D. (Don) Carr-Harris, former plant engineer at the Columbia Cellulose (Celanese Corp. of America subsidiary) sulfite pulp mill at Watson Island, B. C., is now assistant to the president (Manson Sutherland) of Sutherland Refiner Corp., Trenton, N. J.

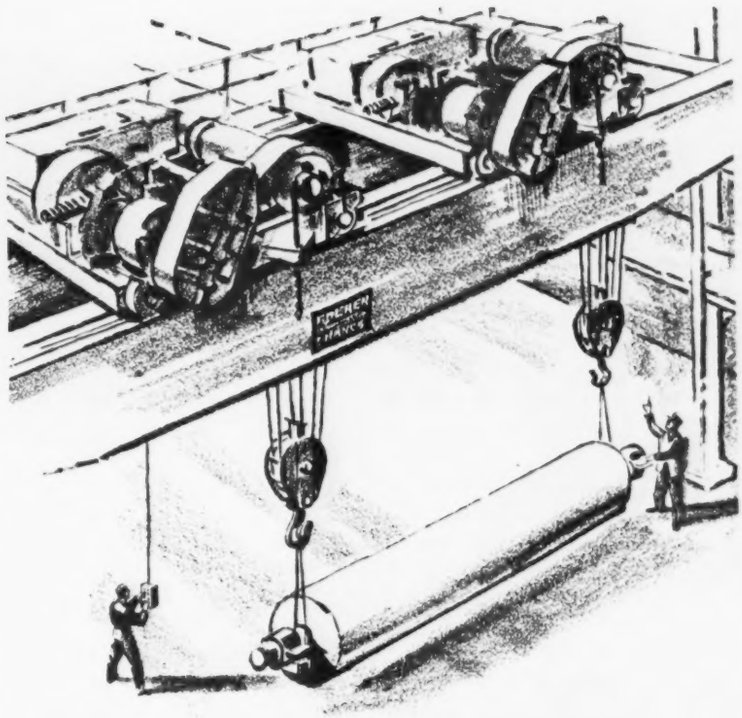
Mr. Carr-Harris, who joined Sutherland Refiner last December, also will devote part of his time to traveling, especially to assist in starting up of new Sutherland equipment.

Born in Cananea, Mexico, son of a Canadian mining engineer, he graduated in chemistry and mathematics at Western Ontario University in 1934. He was with Anglo-Canadian Pulp & Paper Mills, Quebec City, till 1940. He returned to Anglo-Canadian for two years, as woods control superintendent, then went with a textile bag firm, Woods Mfg. Co., and managed their plant in Ottawa. He was at Watson Island from 1950 to late 1952, being there for the mill start-up.

MINNEAPOLIS-HONEYWELL REGULATOR CO., Industrial Div., Philadelphia, Pa., announces a chart drive which instantly increases chart drive speed automatically when a variable exceeds predetermined limits. Called a 2-speed chart dive, the mechanism is designed for use in Honeywell's single-record strip chart instruments, and for conversion in the field of single-speed instruments already in use where added versatility is desirable. Honeywell will begin taking orders for the new chart drive in May, with delivery for August.

CHANGES AT CENTRAL NATIONAL

LEO SCHENKER (left) has been elected Vice President of Central National Commercial Co., Inc. Mr. Schenker started with these interests four years ago during which time he made numerous trips to Central and Latin America. A new face at Central National is that of PETER HARTIG (right), who joins sales staff after 17 years in paper export field.



Tell us your requirements . . . we'll "job-engineer" the crane!

When this two-trolley machine room crane was installed in a Western pulp and paper mill, the company was planning for future plant expansion. With this in mind, EDERER "job-engineered" what is literally a "half crane"—with a 49-foot, 8-inch span which will later be extended to 75 feet when the machine room is enlarged. Extension of the span can be made simply—and with no change in the crane's present 24-ton capacity or operating speeds. So suited to future plant-planning was this half crane design, that EDERER has since "job-engineered" similar cranes for other leading pulp and paper manufacturers.

Special cranes for the pulp and paper industry are everyday business with EDERER. Why not talk over *your* requirements with an EDERER engineer? Delivery can be made to meet your schedule for plant expansion or new construction.

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Let Swenson Engineering Help You Solve Them!

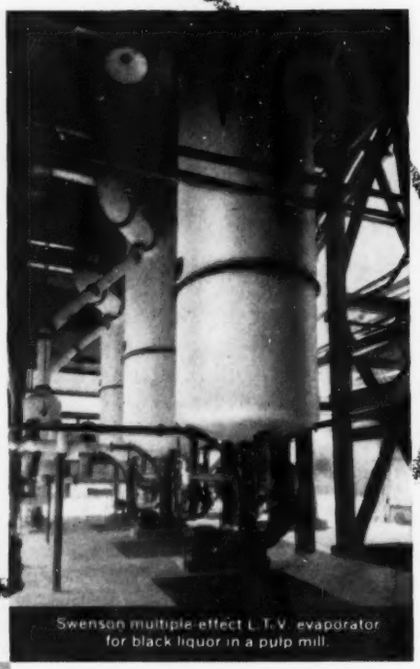
Take the *proved* way to more efficient black liquor evaporation . . . call on Swenson engineering! Swenson L.T.V. Evaporators were the *first* of this type to be adapted to the job. They provide lower cost operation . . . plus *all* the benefits of Swenson's specialized experience in this field.

Write for complete information today.

SWENSON EVAPORATOR COMPANY

15632 Lathrop Avenue, Harvey, Illinois

Evaporators • Pulp Washers • Filters • Causticizers • Digester Blow Condensers • Surface Condensers • Turpentine Condensers



Swenson multiple-effect L.T.V. evaporator for black liquor in a pulp mill.

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Proved Engineering for the Process Industries SINCE 1889

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"Heat Transfer and Crystallization" offers 52 pages of authoritative data on modern evaporation and crystallization methods. Ask for your copy today!

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We can place—Managers, supts. and asst. supts. for board and paper mills; production supt. with asbestos cement experience; polyethylene bag mfr.; paper and board mill salesmen and sales mgrs.; coating techician with tech. education and wide exp. $8,000-$10,000 yr.; supt. softboard mfg. plant.

Master Mechanics, plant, mechanical and electrical engineers, maintenance foreman, designers and draftsmen, salary range $5,000 to $8,500 year; chemists, chem. engineers and laboratory men for mills and for selling and demonstrating, salary range $4,000-$8,000 year; materials handling engineer; Cylinder and Fourdrinier mach. foreman; finishing foremen; sales trainee pulp and paper position in N. Y. City; beater engineers; machine tenders and back tenders.

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Position of responsibility with national manufacturing company selling steam specialties. Prefer graduate engineer in good health with established sales experience, aged 28-38. Position requires and rewards integrity, energy and initiative. Location—Pacific Northwest. Replies held in strict confidence. Please send reply to P&P Box No. 147, c/o PULP & PAPER, 370 Lexington Avenue, New York 17, N.Y.

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"Designers, detailers, layout draftsmen for board work with old established manufacturer of medium and heavy machinery. Men with paper mill machinery experience preferred. Permanent openings, excellent salary and working conditions. Hospital and surgical benefits. Resume covering work, technical history, and salary expectancy required." Address P&P Box No. 144, % PULP & PAPER, 370 Lexington Avenue, New York 17, N.Y.

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Rug Rayon Plant Opens

Bigelow-Sanford Carpet Co.'s new rayon plant at Hartford, Conn., has gone into partial production and will be in full production this fall. One of the newer uses of woodpulp is in rayon rugs.

The Natwicks Take a Bow

The Natwick families of the paper industry—many of them in Washington and Wisconsin states and elsewhere, and widely known in the industry—were pushing their vest buttons a bit when the news of Moviedom's Oscar awards came out recently.

They are all cousins of Mildred Natwick, who played one of the leading roles in the color film made in Ireland—"The Quiet Man." In case you saw the Oscar-winning movie, Mildred Natwick played the second feminine lead, the wealthy country dame who finally married the squire, played by Victor McLaglen. Miss Natwick is also mentioned in Chicago programs of the "Call Me Madam" stage show as one of the famous Irish Abbey players.

Sponsors Two Baseball Teams

F. J. Herb, president of Pacific Coast Paper Mills, Bellingham, Wash., says the sponsorship of two small boys' baseball teams in Bellingham Leagues, each undefeated in eight starts, "did much for the mill from an advertising and public relations standpoint."

HAM FELTZ says:

"It's paper...but it's NOT foolscap"

It makes no difference what kind of a hat a man wears. What really counts is the knowledge and experience under the hat.

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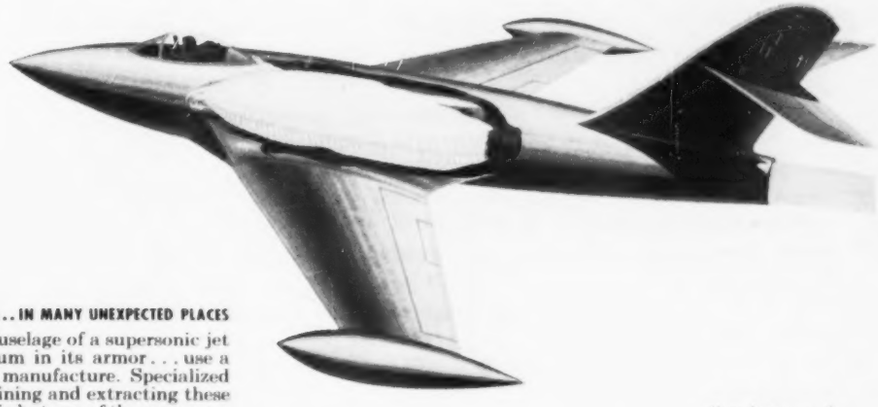

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The aluminum alloy in the fuselage of a supersonic jet . . . and the steel-molybdenum in its armor . . . use a derivative of corn in their manufacture. Specialized corn starches are used in refining and extracting these metals from their ores. This is but one of the numerous examples of how basic research in corn helps American industry . . . helps you.

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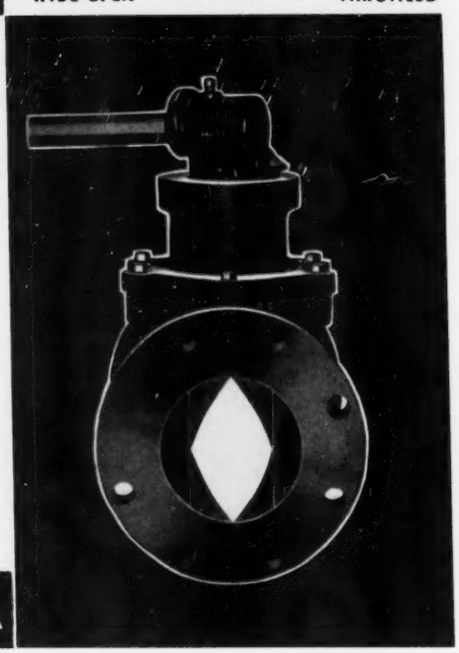

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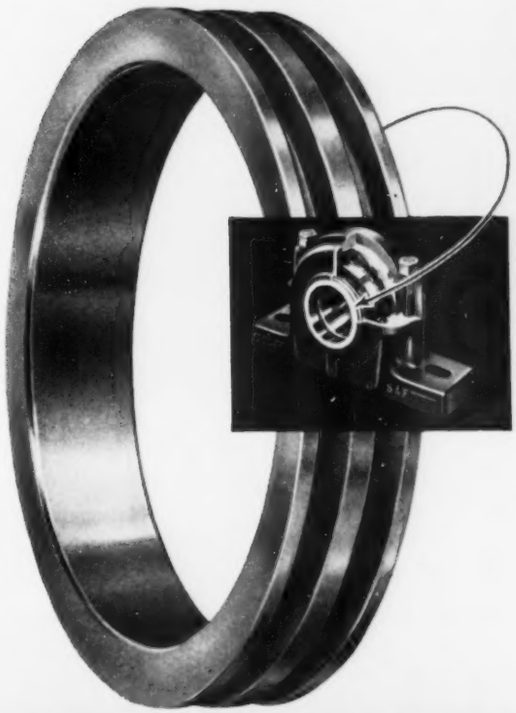

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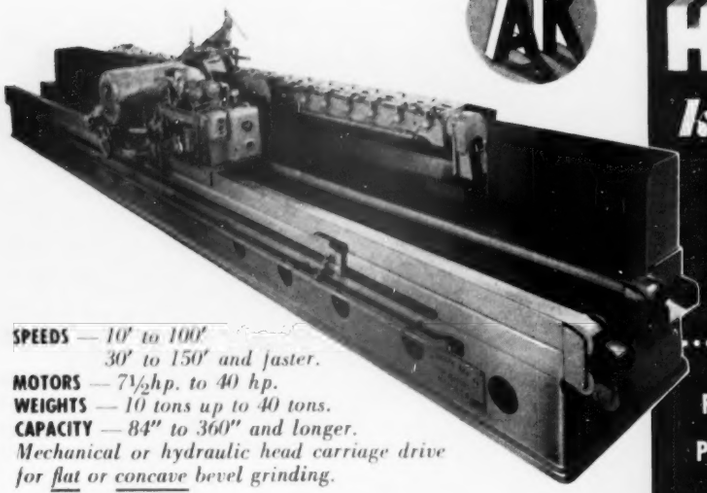

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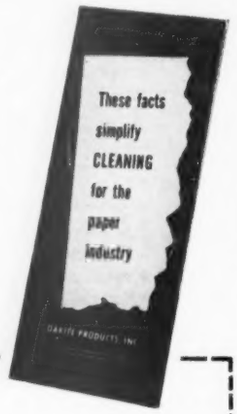

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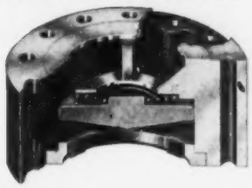

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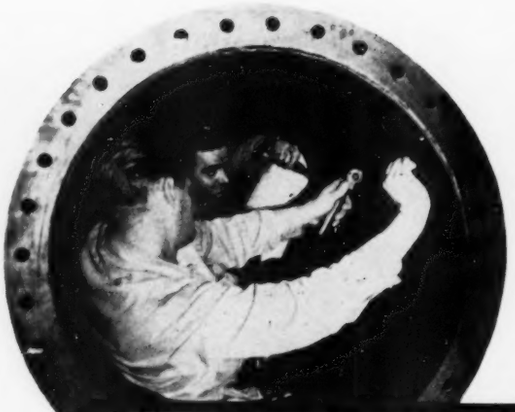

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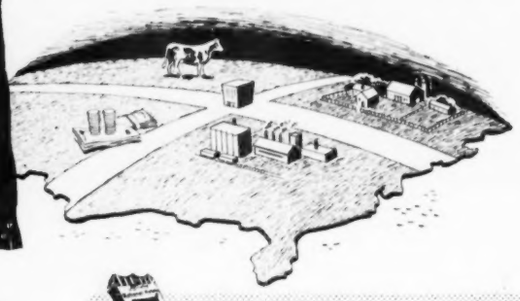

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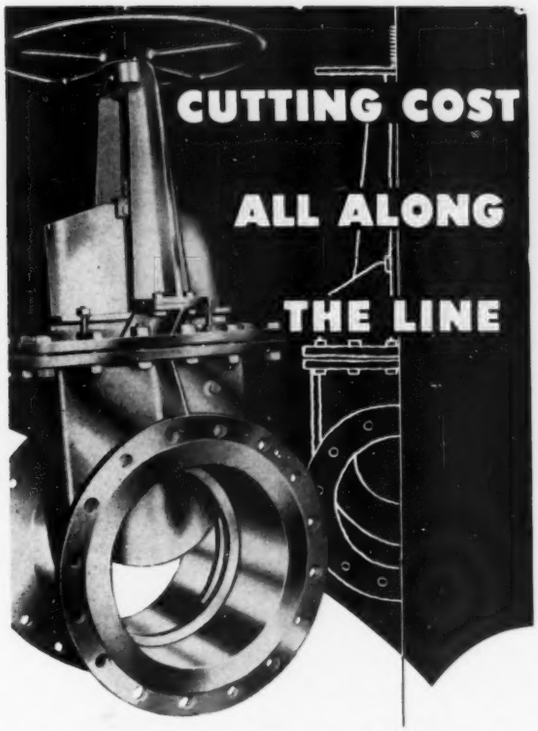

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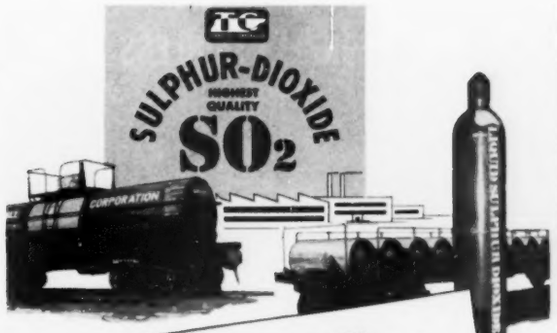

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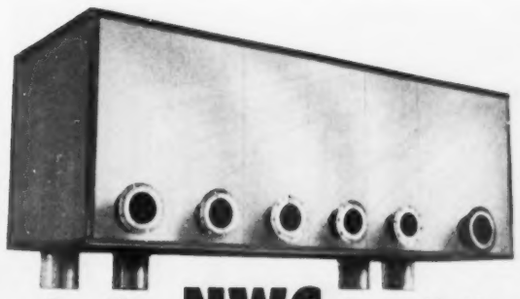

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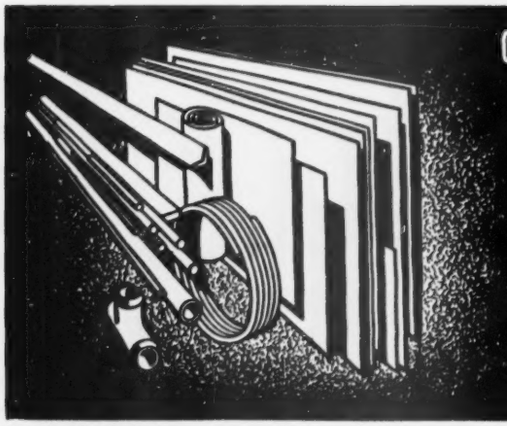

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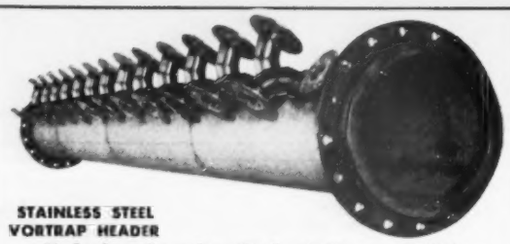

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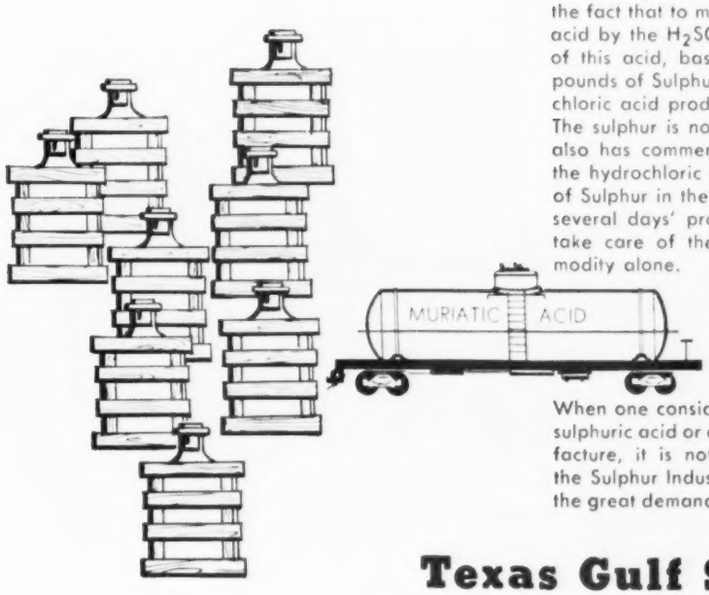

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